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ABSTRACT

The project which resulted in this report was a study of decision making in the selection of science library materials in college and university libraries. Questionnaires, interviews and objective collection descriptions were used to collect information in the fields of chemistry, physics and biology. Part I is an analytic description of the selection decision-making process; Part II contains guidelines for institutions, designed to improve decision-making methods; Appendix A provides aids and forms for local data collection to assist the librarian in analyzing his local selection processes and user requirements; and Appendix B contains supporting technical data. A summary of thirty-four conclusions selected from the report highlights the more pertinent and interesting findings of the study. (AB)

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DECISION-MAKING IN THE SELECTION OF SCIENCE LIBRARY MATERIALS FOR HIGHER EDUCATION: EMPIRICAL FINDINGS AND GUIDELINES

Alfred J. Farina
① Monroe B. Snyder

④ J1102175

Prepared for:

THE AMERICAN LIBRARY ASSOCIATION, Chicago Ill
50 East Huron Street
Chicago, Illinois 60611

REVIEW NOTICE

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③ YUB 32790

Prepared by:

HUMAN SCIENCES RESEARCH, INC.
Westgate Research Park
7710 Old Springhouse Road
McLean, Virginia 22101

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The cooperation of the 20 Head Librarians at the institutions comprising our sample is deeply appreciated. Their efforts and those of their staff, the chairmen and faculties of the three science departments, and the administrators of the institutions are gratefully acknowledged.

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INTRODUCTION

NATURE, PURPOSE, AND METHOD OF THE PROJECT

The project which resulted in this report was a study of decision making in the selection of science library materials.*

The project had two major objectives:

(1) to describe the selection process as it exists;

(2) to present practical guidelines designed to assist decision makers in the process of selection.

The basic research plan was straightforward: the required information was specified, an information-gathering instrument was constructed to tap the decision-making process, the data were gathered, the results were analyzed, and guides were formulated to enable the process to work better.

The primary object of study was the process involved in the selection of science materials in college and university libraries. This process was examined within the situational context of the institution and the library. Descriptive information about the collection was needed to draw conclusions about the results of the process. Thus, the major objects of study were the *institution*, the *library*, the *selection process*, and the *library's collection*.

---

*See the American Library Association Request for Proposal, "Statement of Requirements for A Study of the Decision-Making Procedures for the Acquisition of Science Library Materials and the Relation of These Procedures to the Requirements of College and University Library Patrons"; the response to the RFP by Human Sciences Research, Inc., HSR-RP-66/21-Mn; and Monroe B. Snyder, "Methodology for a Study of Decision Making in the Selection of Scientific Information" (paper presented at the San Francisco Conference of the American Library Assocation 26 June - 2 July, 1967).

No single technique or method of data collection is without bias; thus the project attempted to minimize that bias and error by taking repeated measures and using different techniques which did not share the same weaknesses. The main methods used were: *Questionnaire*, *Interview*, and *Objective Collection Description*. Each method was applied to a number of sources of information at 20 institutions. For purposes of this study, "science" was operationally defined as chemistry, physics, and biology.

The "advance data collection" questionnaire was sent in a follow-up letter to the Head Librarian who had been contacted previously. This questionnaire's purpose was to develop general statistical background data.

The use of interviews was the major technique. Each university was visited for five days, four of which were devoted to interviews* with the *library staff*, the *administration*, and the *faculty*.

About one day of the five-day visit was devoted to collecting data of a much different nature, which was called *Objective Collection Description*. These data were collected using a number of different measures:

---

*Consideration was given to the inclusion of students as interviewees. While certainly the major user group, the students, however, play a relatively minor role as selectors of science library materials. Attempts were made to determine if a student-library group existed at the institutions. In the vast majority of cases, they did not. Two interviews were held with students who served on the faculty-library committee at two institutions, but no information relevant to the selection process was obtained.

(1) A list of journal holdings was secured from the librarian, where possible.

(2) A list of basic undergraduate science books was derived from "The AAAS Book List for Young Adults." Holdings were checked against this list, using the most appropriate library records.

(3) Strong and weak teaching and research areas were identified by the Department Head in each of the three science departments. This was done by giving him a list of topics which had been selected from the Library of Congress 1965 classification schedule. (A standard and a recent content area had been identified previously for each science.)

(4) Now descriptive data about the collection in those areas (standard, recent, strong, weak) were collected. At universities using the Library of Congress classification system, the cataloger was presented with our science topics followed by the number or numbers assigned by the 1965 Library of Congress classification schedule, and given the following request:

> "I want to be directed to the primary shelf location where, in the main, are located books which treat principally this topic.
>
> According to the Library of Congress classification schedule, these are the primary Library of Congress numbers for this topic. These are the Library of Congress numbers I will be using -- unless you indicate that different numbers are serving this function in this library."

At institutions using the Dewey system, the Library of Congress numbers were not included and the instructions were modified accordingly. Using these classification numbers, the researcher went to the shelf list and counted the number of books for each topic. For each topic, a sample of 15 books was drawn for which publication date and accession number or acquisition date were recorded. Various sub-procedures were provided for handling problems in data collection, such as finding no books (or less than 15) on a given topic.

These procedures resulted in 7,000 interview responses -- a response meaning a reply by one person to one question. In addition, there were over 5,000 objective collection description items and the responses to the advance data questionnaires about the university and the library.

ORGANIZATION OF THE REPORT

A vast amount of information was developed in the course of the project. Parts of this information will be of more interest to some than to others. Therefore, for ease of reference, the final report has been divided into two parts and two Appendices.

> Part I is an analytical description of the selection decision-making process as based on the empirical data analysis of the sample of 20 academic libraries.
>
> Part II contains guidelines for institutions, designed to improve the decision-making methods used in selecting science library materials.
>
> Appendix A provides aids and forms for local data collection so that the librarian can analyze his local selection processes and his local user requirements.
>
> Appendix B contains additional supporting technical data.

The results will be presented first for all institutions in the sample combined, and then by appropriate subgroupings -- i.e., by institutional type, selection type, and specific science. Finally, relationships among selected variables will be reported and general conclusions given. In each case, the results will be organized around three major content areas: the institution of which the library is a part, the key decisions in the selection process, and the nature of the resulting collection.

The greatest amount of data concern the decision-making processes involved. Five key levels of decisions were identified as ultimately determining what materials will be selected for addition to the library.

I. Library appropriation decision

By "library appropriation" is meant the total amount of money received annually by the library for its operations.

II. Acquisition budget decision

By "acquisition budget" we mean the total amount of money designated for the acquisition of library materials. Presumably, this amount is a portion of the library allotment identified above. Included are both free and encumbered funds for books and serials.

III. Allotment decision

By "allotment of funds" is meant the ways in which acquisition funds are distributed to or earmarked for the various departments or subject areas. Included here is the subdecision of whether funds should be retained and spent by the library or alloted to the departments for their use.

IV. Collection decision

These are decisions that define the desired makeup of the collection. (The end product of these decisions might take the form of a statement indicating in just what areas the library should be strong, etc.)

V. Selection decision

These are decisions to purchase a specific title or item. For each of these decisions, questioning and analysis focused on four major areas:

- A description of the nature of output or end product of the decision -- the results of the decision-making process.
- The identification of those people who are decision makers.
- The identification of the information used as inputs or guides in the decision-making process.
- An evaluation of the specific decision-making process in terms of its efficiency, strengths, weaknesses, and suggested recommendations for improvement.

Presentation of a large mass of data, even when well organized, can place a heavy burden on the reader. Recognizing that various members of the audience to which this report is presented will want to focus on different aspects of the problem, a further step has been taken to permit the reader to locate portions of high interest: each data item or group of related items has been preceded by the question on which it bears.

The data are presented using various standard descriptive statistical techniques. The data obtained from interviews are most often reported in terms of the percent of responses falling into various categories. It must be made clear that many questions yielded more than one response from a respondent and the number of responses varied from respondent to respondent. For example, one faculty member might indicate six sources of information about new books and another, only one.

In such cases, alternatives given are usually presented in terms of the percent of respondents indicating that alternative. Thus, if 20 faculty members gave a total of 50 responses when asked for suggestions and the most frequently mentioned one was noted by 10 faculty members, it would be reported as being mentioned by 50% (i.e., 10 of the 20 faculty members). Any percentages given should be assumed to refer to the percent of respondents mentioning (percent mentioned or PM) unless specifically noted otherwise.

The number of cases upon which statistics such as percentages are based remains fairly constant throughout the analyses (e.g., 20 head librarians, 175 faculty members). For those items of data which are based on a smaller number of cases, the size of the sample will be noted, usually using the convention (n = __).

The results presented here are an accurate representation of what was found at 20 institutions. By close attention to data collection methods and the use of high level data collectors, it is believed that errors of measurement resulting from imperfect measures have been held to a minimum.

While one may have a high degree of confidence that the study has adequately tapped the selection process at 20 institutions, what the results mean in respect to the other 2,000 or so institutions in the country is a separate question.

Although this study was not an attempt to produce statistical estimates of what the situation is at all colleges and universities throughout the country,[*] it is unrealistic to believe that no one will try to generalize from this limited sample to larger academic populations. Those attempting generalization must recognize, however, that the data presented here offer only limited help by describing the sample population. To the extent that the reader believes the present sample is a true representation of the remaining institutions, he has reason to believe that similar results will obtain in the larger population. However, for this study, such generalizations must be the responsibility of the reader; the data are not designed to support them. The data are designed to describe findings in a sample selected to encompass many variations, such that a wide range of alternatives may be identified and considered in the development of the guidelines which comprise Part II of this report. The remainder of this report presents a description of the findings at 20 institutions selected to cover a range of variations of interest.

---

[*] A complete discussion of the approach and methods is not appropriate here. However, it should be noted that the present approach was chosen over an alternative approach of randomly selecting 20 institutions. The random selection approach would have permitted statistical estimates -- tests of significance -- to be applied, but the small sample would have minimized the chances of reporting statistically significant differences. The non-random selection approach used permitted certain infrequent variations to be observed, which would have been unlikely to be included in a randomly selected sample.

PART I
EMPIRICAL FINDINGS

ANALYSES ACROSS ALL SCHOOLS

GENERAL CHARACTERISTICS OF SAMPLE INSTITUTIONS

The 20 institutions composing the sample were selected* to cover a range of differences among institutions and their libraries. The institutions were located in urban, suburban, and rural areas throughout the country. In terms of growth rate, 4 institutions were considered to be "developing," while 16 had reached a relatively stable state. Nine were large (over 6,000 students) as opposed to 11 being small (under 4,000 students). In terms of ownership, 9 institutions were private, and 11 were state institutions.

One indication of the variations within the sample is their range across certain dimensions: 900 to 23,500 students; 54,000 to 754,108 volumes; 6 to 151 library staff members; 17 to 812 combined faculty members in the Chemistry, Physics, and Biology Departments (teaching and research assistants included); and a range in total library budget (1965-66) of from $68,600 to $1.5 million. Figures 1 to 5 show how the sample is distributed across each of these dimensions.

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* The sample was selected by the American Library Association acquisitions project Advisory Committee in consultation with the HSR research staff.

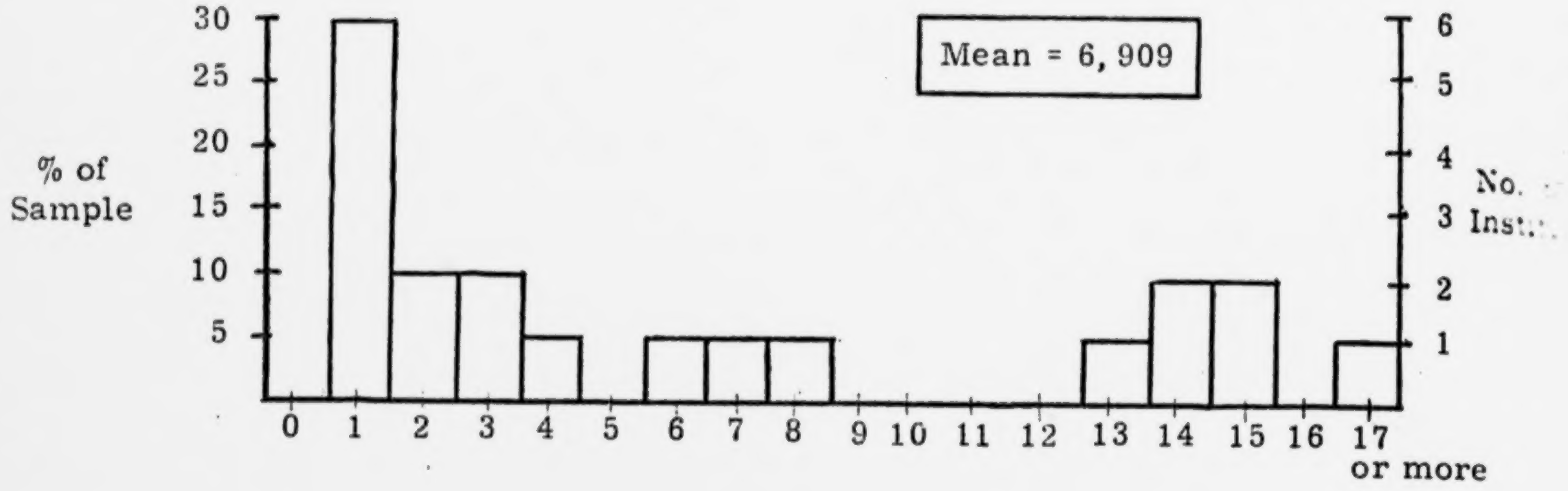

Figure 1: Student Enrollment (in thousands)

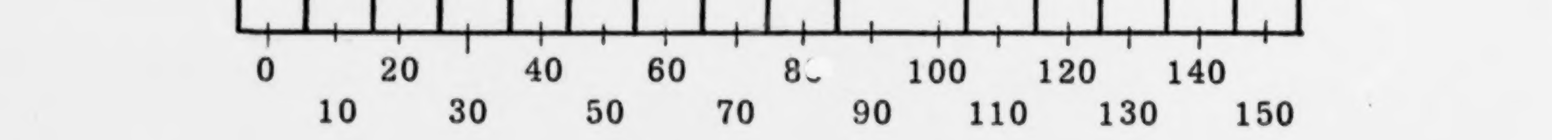

Figure 2: Number on Library Staff
(Professional and Non-Professional)

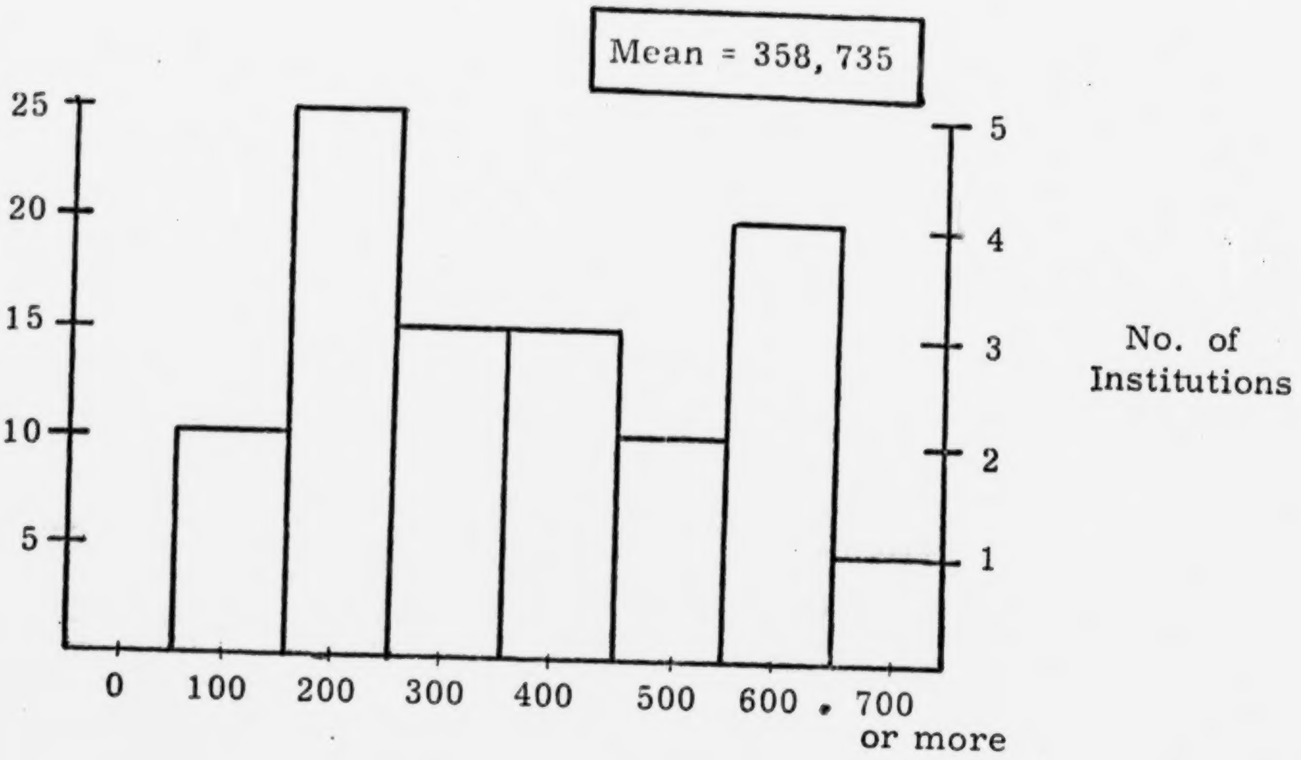

Figure 3: Number of Books (in thousands)

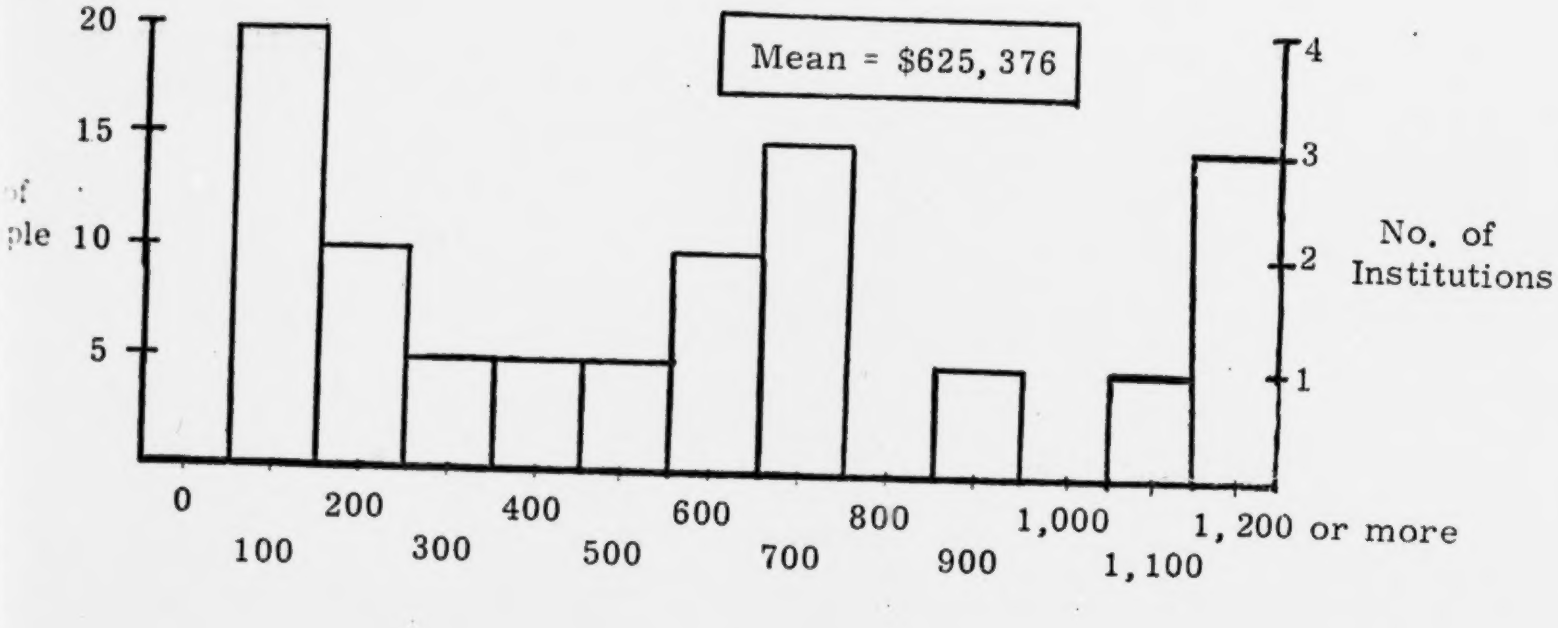

Figure 4: Library Expenditures (in thousands of dollars)*

*Total: N = 19 institutions

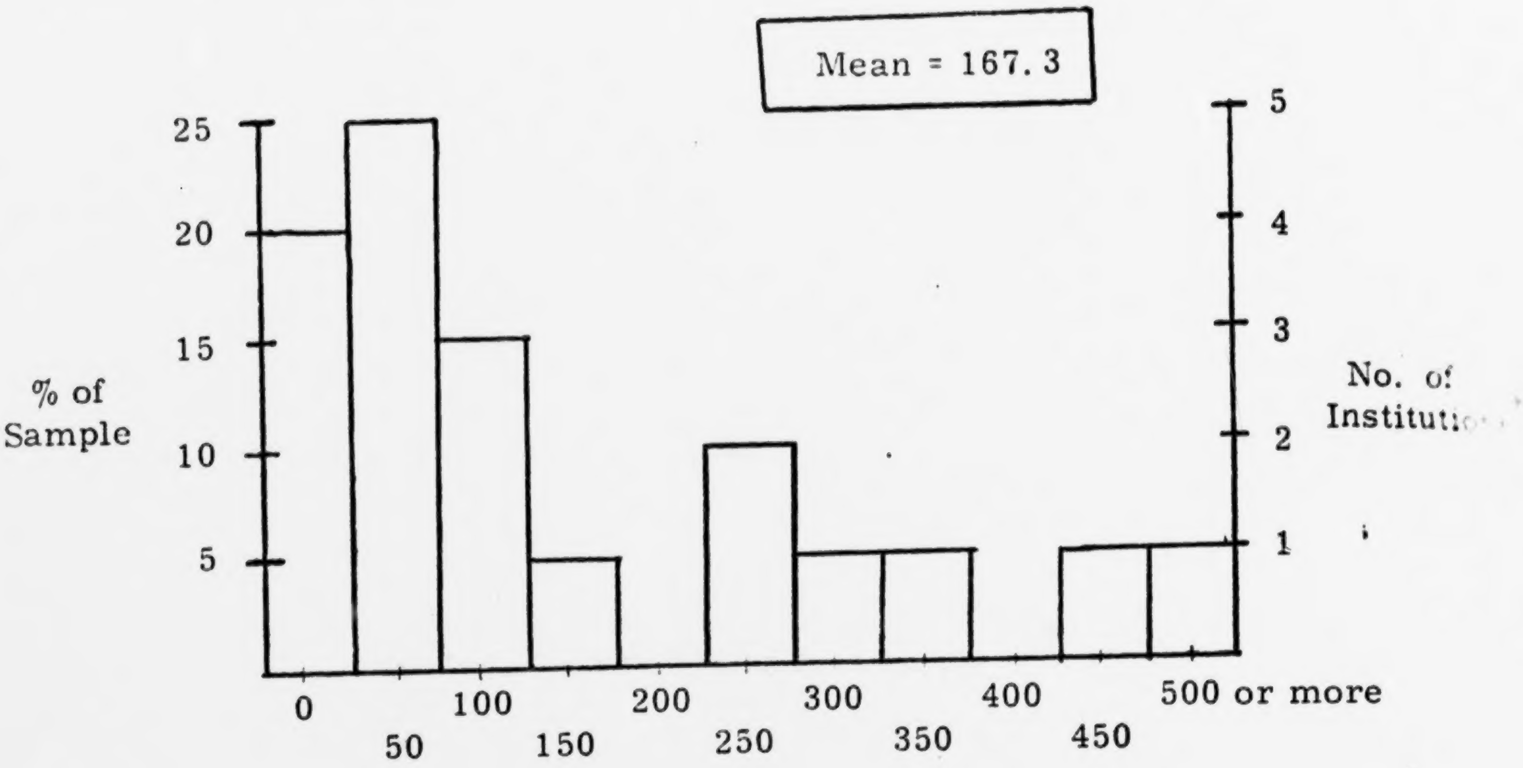

Figure 5: Number of Science Faculty Members in Chemistry, Physics, and Biology (includes teaching and research assistants)

*Total: N = 19 institutions

RESULTS RELEVANT TO BASIC DECISIONS

Library Appropriation Decision

Q. What is the library's input?

The primary input to this decision is a budget submitted by the library to the administration. In 18 institutions, or 90% of the sample, the libraries were responsible for generating this initial budget. In the remaining two cases, the library either made no input to this decision, or it provided only general information to a non-library group responsible for preparing a budget.

Q. What is the librarian's estimate of funds based on?

Those librarians (n = 18) who did prepare a budget were asked what factors entered into the library's estimate of funds required. Consideration of the general budget categories (line items) and the rising costs of library materials and services were mentioned by 55% and 70% of the librarians, respectively. Additional responses cited the number and/or type of incoming students (65%) and additions to the faculty (75%). Curriculum offerings were mentioned by 75% of the head librarians. Thus, the nature of the curriculum or patron population was cited most frequently. A range of factors accounted for the remaining responses:

Comparisons with other libraries -- 40%

Requirements of accreditation associations -- 35%

State of the collection as determined by
assessments and/or inventories -- 30%

Relevant future plans of the institution -- 15%

Factors cited by only one (5%) or two (10%) Head Librarians included:

- New areas of research
- New library services
- Needs introduced by automation
- Number of grants/contracts received by the institution
- Present uncataloged backlog
- Expansion limitations imposed by present staffing and space
- Extent of the interlibrary loan operation
- User demands

Q. Are there unusual budgeting problems for the sciences?

The 20 librarians were asked whether the sciences present any unusual problems with respect to budget plans. A majority of the respondents (80%) indicated that unusual problems did exist, while 20% were negative. The types of problems cited were as follows:

- Science materials are more expensive -- 45%
- Science journals are increasing in number and cost -- 30%
- Science departments exert pressure for departmental or branch libraries -- 10%
- Science departments have a rapid growth rate -- 5%
- Sciences present needs for special services -- 5%
- Unspecified responses -- 20%

Q. Who is the final decision maker for library funds?

In terms of who makes the final decision on campus as to how much money the library will receive, the responses of the 20 head librarians were distributed in the following manner:

President (Chancellor) or Vice-President
(Vice-Chancellor) -- 85%

Treasurer, Bursar, Business Manager -- 35%

Academic Dean, Dean of Faculty -- 25%

Board of Directors, Trustees, Regents -- 15%

Head Librarian -- 5%

Q. What influences the final decision maker?

Sixteen of the 20 librarians (80%) indicated that the information they provided to the decision maker was influential in his final budget decision; the 4 remaining librarians (20%) felt that their information was not influential to this decision. When asked what information -- aside from that provided by the library -- they felt the decision maker relied upon in making his decision on the library budget, the 20 librarians responded in the following way:

Total funds available -- 35%

Information from the faculty -- 35%

Current mood of the state legislature -- 15%

Budgets of past years -- 15%

Comparisons with other libraries -- 15%

Information from Deans and other administrative personnel -- 10%

Whether it was "the library's year" -- 10%

In regard to the money finally received by the library, the libr ians were asked if it typically represented some fixed proportion of the institution's total budget. Three (15%) of the librarians indicated that did, while 17 (85%) indicated that this was not the case.

Some additional evidence on what influences the final decision maker comes from responses provided by institution administrators (n = 17) about their sources of information concerning the needs and adequacy of the collection. These data can be summarized as follows:

Information Source of Institution Administrators (n = 17)	On Collection Adequacy	On Collection Needs
Faculty	76%	59%
Deans, Department/Division Heads	35	41
Faculty/Library Committee	18	47
Head Librarian	18	47
Comparative Statistics and Standards	35	29
Special Studies	24	12
Other Library Personnel	0	18
New or Potential Faculty Members	18	6
Students	6	6
External Users	0	6

These results appear to indicate that the administrators as a group relied most heavily on academic personnel and statistics for determining adequacy, but relied less heavily on them for assessing the needs of the collection. They appear to more often rely on the head librarian and his staff for information about what is needed than for information about how adequate the collection is.

Q. Can additional information improve his decisions?

Half of the 20 head librarians believed that the decision maker could reach a "better" decision if he were provided with additional or different information. When asked what this information might be, 4 head librarians mentioned information directed toward the legislature, while the following were each mentioned by two:

Information regarding the needs of the departments

Objective data (statistics) on the collection

Information which would keep the decision maker library-minded

Q. How did the head librarians evaluate the present appropriation procedure?

Twelve of the 20 head librarians (60%) said that they were satisfed with the present way of deciding what the library's appropriation would be; 40% said that they were not satisfied.

The 20 head librarians were asked what were the strong features of the present procedure. One felt that it had no strong features. Strong features were identified by the rest as:

The independence given to the librarian to assess and reflect overall needs -- 40%

The close coordination and cooperation existing with the decision maker -- 40%

The flexibility of the procedure (neither rigid nor tied to formula) -- 20%

The informal give-and-take atmosphere; opportunity to get feedback and defend one's position -- 20%

Inputs made by the faculty regarding department needs -- 20%

The support provided by the faculty -- 10%

Presence of an automated bookkeeping system -- 5%

Availability of extra funds -- 10%

Stability provided by use of formula -- 5%

Weaknesses identified by the head librarians were as follows (eleven [55%] of the 20 head librarians felt that the present total-budget procedure had no major weaknesses):

Not enough freedom to truly reflect the needs of the institution -- 15%

Procedures are too subjective, too informal, not based on objective data -- 15%

Formula used is too inflexible -- 10%

Major decision made by people too remote from the scene -- 5%

Inability to appeal budget decision -- 5%

Not enough record-keeping done for advanced planning purposes -- 5%

Bookkeeping system is not in accord with purchasing needs of library -- 5%

Q. How do administrators and library committee members evaluate the library appropriation?

Most administrators (65%, n = 17) and library committee members (63%, n = 16) felt that appropriate support and attention are being given to the library. However, 41% (n = 17) of the administrators and 37% (n = 16) of the committeemen voiced complaints about library funds.

Q. How would the librarians improve the appropriation procedure?

When asked what suggestions did they have for improving the procedure for determining the library's budget, 8 of the 20 head librarians (40%) had no suggestions; the rest of the librarians responded in the following manner:

Increase the flexibility of the procedure; allow for contingencies -- 20%

Base the final decision on additional or different information -- 20%

Change the budget categories -- 15%

Provide for more faculty/library staff involvement -- 10%

Provide a stronger role for the librarian -- 10%

Shorten the time period for which the budget is projected -- 15%

Increase the time period for which the budget is projected -- 5%

Provide longer lead-time for budget planning -- 5%

Occasionally use a management consultant to aid in budget development -- 5%

Acquisition Budget Decision

Q. What is the nature of the acquisition budget?

The primary component of interest in the total budget just discussed is that portion devoted to acquiring new books and periodicals. In terms of a dollar amount, the following ranges existed among the sample institutions for the fiscal year 1965-66: books, \$10,500 to \$434,636 (the mean was \$175,000); periodicals, \$3,500 to \$345,065 (the mean was \$80,000).*

Q. Who determines the acquisition budget?

In discussing the contributors to this decision, the responses of the 20 head librarians were distributed as follows among these categories:

Faculty is involved -- 45%

Librarian decides in consultation with staff -- 40%

Librarian (or his designee) decides alone -- 35%

President or administration is involved -- 10%

Amount is determined by formula -- 10%

State legislature is involved in decision -- 5%

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*Based on data obtained from 17 institutions.

Q. What factors influence the acquisition budget?

As to the factors entering into this decision, the following were cited by the 20 head librarians:

Consider needs and uses of departments in previous years -- 45%

Consider rising costs -- 40%

Assess future growth and changes on a department and institution basis -- 30%

Assess possibility of receiving additional external funds -- 20%

Assess standing-order commitments -- 10%

Formula makes this decision -- 15%

Assess periodicals commitment -- 5%

Assess weak areas of collection -- 5%

Six of the institutions reported that the sum allocated for book and periodical acquisition represented a fixed proportion of the total library budget; however, 3 of these 6 viewed this fixed aspect as an unintentional feature, i. e., it just happened to occur that way over the last few years. The remaining 14 institutions reported no constant proportion.

The question of external grants or federal funds for materials was relevant to this decision. Sixteen (80%) of the 20 libraries had received one or more of these types of assistance; 3 libraries (15%) had not (one institution was not eligible for such funds). For the 16 recipient libraries, all had received Title II funds, 6 had gotten National Science Foundation funds, 2 had obtained funds from the Department of Health, Education, and Welfare, 2 had received Title VI funds, and 2 had received grants of an unspecified nature.

Six of the recipients reported that the time constraints associated with the grant (principally Title II funds) were quite restrictive[*] -- e.g., they "had five days in which to spend the money." Three of the libraries used their grants to obtain large acquisitions, such as a microfilm version of the New York Times. It was reported at 3 libraries that the acquisitions made with these funds involved departures from their usual selection policies or practices. In the case of Title II funds, in only 3 of the 16 libraries (19%) were the faculty directly involved in the decision on what to acquire with these funds.

Q. How do librarians evaluate acquisition budget decisions?

In regard to their satisfaction with present methods of determining acquisition budgets, eleven (55%) of the 20 head librarians said that they were satisfied, 5 (25%) said that they were satisfied on some aspects but not on others, and 4 (20%) reported that they were largely dissatisfied with their present method.

The strong points of the present procedures were enumerated as follows (only 1 of the 20 head librarians felt there were none):

Flexible; not tied to a formula	25%
Ultimate decision based on a variety of inputs	25%
Budgetary control of this decision is in the library	15%
Freedom to seek outside supplements (grants, etc.)	10%

---

[*] Apparently this situation has since been corrected.

Procedure provides for expression of actual needs -- 5%

Formula determined; easy to make up -- 5%

Formula is useful to the majority of libraries in the system -- 5%

Having the departments estimate their book needs fosters their involvement and cooperation -- 5%

The weaknesses of the present procedures (7 [35%] of the 20 librarians felt there were none) were described in terms of:

Too inflexible -- 25%

Inadequate information on new programs -- 15%

Procedure compels library to act as an accountant toward the departments -- 5%

Requires commitment of total staff to adhere to estimates -- 5%

Inability to plan ahead affects our hiring efficiency -- 5%

Q. What suggestions were made for improvement?

The following suggestions for improving present procedures were elicited from the 20 head librarians:

None -- 40%

Greater attention to this particular library's needs (as opposed to all libraries within the state system) -- 20%

Increase the number of decision makers -- 15%

Greater coordination among present decision makers -- 15%

Use better formula or automatic decision methods -- 10%

More consideration of effect of users beyond the institution's community -- 5%

Creation of separate line items in budget for each department; would increase faculty involvement -- 5%

Ability to defer portion of book fund when other money becomes available and must be spent quickly -- 5%

Constant watching over important shifting factors; e.g., total output of titles, new media -- 5%

Frequent assessment of collection -- 5%

Allotment Decision

At this decision level, the focus of inquiry begins to shift to the more narrow purview of the sciences (physics, chemistry, and biology). The basic decision concerns the division of book acquisition funds between selectors on the library staff and those on the faculty. A second issue is whether separate book budgets are established for each department (faculty selecting can take place in either case).

Thirteen libraries were able to provide financial data on acquisition fund expenditures (books and periodicals; binding excluded) for the three sciences during the fiscal year 1965-66:

	Range	Average
Physics	$440 - $15,800	$5160
Chemistry	440 - 23,300	7270
Biology*	660 - 33,825	7234
All three sciences:	$440 - $33,825	$6537

Q. Who influences and determines acquisition fund allotments?

In 4 of the 20 (20%) libraries no division of the acquisition fund occurs and a general "first come, first served" strategy prevails. For the remaining 16 libraries, the following distribution of total responses indicates the relative participation of various decision makers:

Librarian decides with staff assistance -- 69%

Formula or proportion serves as a guide -- 31%

Faculty are influential -- 25%

Faculty/Library Committee is influential -- 19%

Decision made by committee composed of library, faculty, and administrative personnel -- 6%

Of the 17 Faculty/Library Committee chairmen interviewed, 10 (59%) indicated that their committees became involved in some aspects of the library's budget. Summary descriptions of the committee's participation were obtained and are presented below for 10 committees; they refer to activities dealing with the acquisition portion of the budget -- either at the department allotment level or the budget itself.

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* The department of biology at various institutions may actually be composed of 2 to 5 departments, i.e., micro-biology, zoology, botany, etc.

Review history and plans of the departments
to determine funding -- 30%

Review department requests for book funds -- 20%

Use a formal instrument, e.g., questionnaire,
survey, or formula to determine department
allocation -- 20%

Committee serves as "rubber stamp" for pre-determined department allotment figures -- 10%

Review and modify if necessary pre-determined
department allotment figures -- 10%

Committee is sole determiner of department book
funds -- 10%

Q. What is the extent of departmental acquisition budgets?

Going further into these 16 libraries, it was found that separate gets for the various academic departments exist at 13 (81%)of the 16. O 13 libraries, the departments are told of their specific allotments at 11 (85%), while at the remaining 2 libraries (15%) the departments do not know the exact amount of their allotments.

Q. What determines the amount of the departmental acquisit budget?

An examination of the factors influencing the determination of the science departments' book budgets in those institutions where such budg existed (13 institutions) produced the following responses:

Size of department, number and level of
courses taught, past performance -- 77%

Knowledge of future plans of a department -- 39%

Faculty-library negotiations -- 23%

Formula used -- 23%

Explicit determination by Faculty/Library Committee -- 15%

Gaps detected by collection assessment -- 8%

Administration makes an influential input -- 8%

Rule of thumb involving yearly published output in a field times average book cost yields relative distribution pattern among departments -- 8%

Collection Decision

The previous decisions dealt essentially with allotments and sub-allotments of basic monetary resources. In the collection decision, attention is directed at examining the policies and principles which guide the conversion of money into materials.

Q. How frequent are collection policy statements?

Three of the 20 libraries (15%) had a written selection policy in existence at the time of this study. According to these 3 libraries, the information needed or used in developing the policies entailed knowledge of the goals of their institutions; examples of policies produced by other libraries; an awareness of other library resources available in their geographical areas; recognition of department and faculty desires in regard to the collection; and an awareness of accepted standards regarding collection size.

The policies were reported to have proved useful at 2 of the 3 libraries. In both cases, they served to guide the development of the collection and acted as defense devices in reducing inappropriate requests. Both libraries also said that the policies enabled them to foresee what of collection would develop if they were followed.

Q. What circumstances lead to policy revision?

The 3 "policy holding" head librarians were asked, "Under what circumstances would you consider it necessary to revise your policy?" Their responses included the following factors: a change in the goals of the institution; a change in the administration; dissatisfaction with the policy among either the faculty or the administration; possible revision due to sheer passage of time; a change in the funding situation; and technological changes.

Q. Are collection policies specific to the sciences?

None of the 3 policy statements made specific reference to the sciences. This finding is of interest in light of the fact that 11 of the 17 non- policy-holding libraries said that there were selection practices which were specific to the sciences. In other words, the sciences appear to have certain unique problems when it comes to selecting material for them, but no reference to these problems exists at the policy level.

Q. What reasons are given for no policy statement?

The 17 libraries which did not have a written policy statement were asked why they did not have one. Among the most frequently cited reasons were these: no need felt for a formal statement; would be too inflexible -- library must do the best it can as needs and resources change; close cooperation between faculty and library precludes the need for a policy statement; comprehensive, automatic ordering procedures preclude need for policy. Less frequent (one-person comments) included the following: inability to develop and agree on a good one; should write one but haven't had the time; lack of a Faculty/Library Committee prevents the important faculty inputs which are needed for policy development; with our pressing needs, the faculty would have been impatient with such a statement; would need inputs from the administration and they have not provided them; and, people dislike rules, preferring freedom to operate as they see fit. In 3 cases, no answers were given to this question.

Twelve of the 17 head librarians (71%) with no selection policy felt that they could foresee the type collection being developed; 29% could not.

It seems apparent that the majority of head librarians questioned did not have selection policies and expressed doubts as to the usefulness of a selection policy statement.

Q. Are there any selection principles indicative of the nature of the desired collection?

Head librarians and those members of their staff involved in selecting science materials were asked if there were any principles guiding the selection decision. The following principles mentioned give some indication of the kind of collection they are trying to achieve: (n = 63)

Acquire those works directly supportive of institutional goals -- 27%

Selections are made primarily in support of the curriculum -- 25%

Emphasize comprehensiveness (fill in gaps) -- 21%

Avoid purchasing textbooks -- 21%

Acquire textbooks of key authors only -- 3%

Acquire whatever is requested -- 14%

Anticipate users' needs -- 3%

Emphasize quality (scholarly works) -- 18%

Avoid duplication -- 13%

Duplicate only insofar as necessary to meet departmental needs -- 3%

Place emphasis upon current materials -- 6%

Buy foreign language materials only at the research level -- 5%

Library selects the undergraduate and interdisciplinary materials -- 2%

Check other area libraries before buying expensive reference materials -- 2%

Q. Do specific selection practices indicate that the nature of the science collection is viewed differently from the rest of the collection?

As mentioned earlier, 11 (65%) of the 17 libraries having no policy statement stated that there were book selection practices which are specific to the sciences. When asked what prompted the need for those specific practices, the following responses indicated that the science collection was viewed differently by many librarians:

Journals are more important to the sciences than to other fields -- 40%

Science materials become obsolete more rapidly -- 20%

The volume of science materials is greater -- 20%

More funds are available to purchase science materials -- 20%

Costs are higher -- 10%

More need for standing orders in the sciences -- 10%

More consideration is given to the individual scientist's research needs -- 10%

Additional reasons for specific science selection practices had to do more with operational problems than the collection itself:

Less retrospective purchasing occurs in the sciences -- 20%

It is harder for librarians to do the selecting in these special fields -- 10%

Presence of departmental science libraries creates duplication problems -- 10%

Broad coverage is not obtained by science faculty selectors; very narrow specialties -- 10%

Selection Decision

The respondents to questions about this decision included the Head Librarian, library staff, the faculty, administration, and Faculty/Library Committee. In general, the number of persons interviewed in each of these categories was: Head Librarians--20; library staff -- 46; faculty -- 175; administrators -- 17; and Faculty/Library Committee chairmen -- 17. These are the total number of respondents upon which the percentages are calculated whenever data are presented; in cases where these numbers change due to a person not answering a particular question, the new reduced number will be noted by u symbol (n = __). In the following pages, the general term "librari includes both head librarian and the library staff, a total of 66.

More information was collected relative to the title selecti cision than to the other decisions. The data are presented in the fo general order: (a) who makes the decision; (b) who should make the cision; (c) what influences the decision maker; (d) other aspects of t decision-making process; and (e) how did the respondents evaluate t process.

Q. What were the general types of selection processes fou

Estimates were obtained from both the library staff members the head librarians as to what percentage of the science material was to faculty selection as opposed to library selection. At 11 (55%) of the institutions, the faculty did more than 50% of the selecting; the library was dominant in 4 (20%) institutions. The 5 (25%) remaining institutio had automatic acquisition plans of one type or another -- either the Ric Abel plan* or extensive standing orders.

In general, the Abel plan has a rejection feature which means a selection decision is still made on each book; in 2 out of the 3 Abel p institutions, the faculty were the dominant selectors. Standing orders erally do not involve a rejection feature and it is usually the library's decision to place such an order. At the 2 institutions using them, it w found that they accounted for 80% and 50% of the book selections.

If the institutions using atuomatic acquisitions plans are divided into dominant selection groups as just indicated, then the faculty were the dominant selectors (in the three sciences) at 13 (65%) of the 20 institutions the library staff was dominant at 6 (30%); and selection activity was evenly divided at one institution.

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*Richard Abel & Co., Inc., Portland, Oregon.

Q. Who initiates and vetoes or approves requests for purchase of science materials?

The responses of the 20 head librarians to the questions on these topics can be summarized as follows:

Persons Cited by Head Librarians	Initiation	Approval/ Veto
Individual faculty members	95%	0%
Department (faculty) representatives	30	5
A group decision by the faculty within a department	0	15
Department Chairmen	0**	15
Head Librarian and/or assistant	25	65
Science-reference specialists	10	15
Order/acquisition librarian	35	20*
General reference specialists	15	20*
Serials librarian	10	20*
Department or branch librarians	10	0
Library personnel (unspecified)	25	0
Students	5	0

** Department Heads would also be considered as individual faculty members for initiation purposes

* Library department heads were cited by 20% of the Head Librarians

Q. Who has the final approval on the library staffs' selection choices?

Those library staff members (n=46) who were active in the select science materials were asked this question and they responded as follows

Self -- 48%

Head Librarian -- 17%

Other library staff person (his superior) -- 17%

Faculty (library representative, department chairmen, other) -- 13%

Self under certain dollar limit -- 4%

Q. Do faculty and library staff consult each other on selections

Thirty-one (47%) of the librarians (head librarians plus staff memb n=66) indicated that the faculty were frequently consulted on selections m the library. Other response categories were "Occasionally when faculty e pertise is needed, or item is expensive" -- 36%; and "No, very rarely" --

However, 39 (60%) of the librarians (n=65) stated that the faculty d not utilize their services when making selection decisions; 26 (40%) said t the faculty did consult them, but in half these cases it was to obtain budgetary or bibliographic information.

Q. Does the library provide the faculty with selection material

Both head librarians and library staff members were asked this question (n = 66). Twenty-eight (42%) of this combined group reported that no selection information was routinely provided to the faculty by them; (57%) said that they did provide this type of information. Typically, the information took the form of publishers' flyers, ads, catalogs, certain library selection tools, and in one case, Library of Congress proof sheets.

On the receiving end of this information are the faculty. The responses of 174 faculty members to the same question (i. e., "does the library provide you with selection information?") were No -- 103 (59%), and Yes -- 71 (41%). One might conclude that a major discrepancy exists, but since the selection information is generally transmitted to the department rather than to an individual, it is possible that some material stops at that point.

Q. Are there differences in selection procedures among the three science departments?

Fifteen (75%) of the 20 head librarians reported that their science departments all used the same selection procedure; 5 (25%) reported differences among their departments with the explanation that it was the department's prerogative to establish its own procedure.

The head librarians, where applicable, were asked if they knew how the funds allotted to the academic departments were distributed within the departments. The responses of the 11 head librarians were as follows:

Don't know -- 36%

Aware of considerable variation among departments in this regard -- 46%

Individual allotments occur within same department -- 27%

Everyone equal; all order as they see fit -- 27%

Funds are kept in department pool; department chairmen controls same -- 18%

Preference shown to individual needs, e. g., newcomers, active researchers receive more -- 18%

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One library employed a unique system which made direct allocations to each faculty member. It has been in existence for a number of years and has been well received by both faculty and library.

Q. How do the science departments do their selecting?

Sixty-six science departments at 20 institutions were covered in this study; these included the subject areas of physics, chemistry, and biology (where biology did not exist as a separate entity, two more specific areas, e. g., usually zoology and botany, were substituted). Usually three members of a department were interviewed: the department chairman, the library representative (if there was one), and an unspecified member of the department. Where both zoology and botany were involved, this number was limited to the department chairman and the library representative.

In terms of how selection is handled within these departments, three types of selection procedures were observed. The first is called the Multiple Independent Selectors (MIS) type; in MIS departments, all of the faculty members were free to select as they saw fit; no one member did more than 50% of the department's total selecting. The second type is that of the Single Selector (SS) in which more than 50% of the department's library selections were made by a single faculty member. It is of interest to note that the SS type existed in two forms: in one, he was a member of a department in which everyone could select, but he did the most -- due possibly to his position as library representative; in the other form, the SS alone did nearly all of the selecting. The prime difference between these two forms of SS lies in the fact that in the first case his dominant role is not always known to his colleagues; i. e., many did not know that one person was responsible for most of the selecting. The third type involved the department members meeting periodically to vote on selection candidates generated by all members over some interim; this type is called the Departmental Vote (DV) type.

Q. How prevalent were the three types of faculty selection?

An evaluation of the 66 science departments produced the following distribution among types:

Multiple Independent Selectors -- 65%

Single Selector -- 26%

Departmental Vote -- 5%

Unspecified -- 5%

The "unspecified" category includes three departments which do not fit the established categories: one department had only two members and could not be categorized; another used a mixed procedure in that the members voted and any remaining funds were left to individual selections; in a final department, we were unable to determine whether the department library committee (n = 3) or its chairman did most of the selecting. Due to this reason, these three departments are excluded from later analyses based on department selection type.

Q. Who should be responsible for selecting science library materials?

This basic question was asked of all five groups of respondents, i.e., Head Librarians, library staff, faculty, administrators, and Faculty/Library Committee chairmen. Their responses, and reasons for the responses, are presented in the following table:

		Head Librarian (n=20) %	Library Staff (n=45) %	Faculty (n=178) %	Adminis-tration (n=17) %	F/L Committee (n 12) %
RESPONSES	Library Staff	10	20	12	12	8
	Subject-specialist	5	7	8	--	8
	Faculty	30	24	52	29	33
	Joint responsibility	55	56	29	59	50
	Both free to select	--	9	--	--	8
	Library selects reference works; faculty all others	10	7	2	6	25
	Library does major selecting; faculty recommends	15	11	8	--	8
	Faculty does major selecting; library recommends	15	20	3	41	--
	Subject-specialist in consultation with faculty	15	7	13	6	--
	Unspecified combination	10	4	4	--	--
	Automatic Acquisition	5	--	7	6	17
REASONS	Only faculty has expertise	20	16	24	6	--
	Faculty has greatest awareness of its curriculum needs: faculty is more in touch with literature of the field	--	20	15	18	17
	Faculty is charged with or has assumed this responsibility	5	--	3	--	--
	Library is charged with this responsibility	10	4	1	6	--
	Subject-specialist has expertise	--	4	1	--	--
	Only library has knowledge of available sources	--	4	2	--	--
	Library is more in touch with the literature of the field	--	2	--	--	--
	Library has control over the budget	--	--	1	18	--
	Library has greater awareness of need for continuity and comprehensiveness of collection	15	18	1	12	--
	Faculty too busy to do consistent selecting	5	9	--	--	--

In addition to the above comments, certain members of these groups provided additional reasons on a one-man-per-comment basis These are presented along with identification of the source group:

Head Librarian

> Librarian should do the selecting only after acquainting himself thoroughly with the faculty's interest and needs; must be constantly involved with the library's users

Library Staff

> Faculty are too specialized to do broad range selecting
>
> Sciences are too subdivided; would require too many subject-specialists to do the job
>
> Library can do a better job (than the faculty) in the interdisciplinary areas
>
> Selections made by the faculty lead to greater usage of materials by the students
>
> Faculty should do the selecting because selection itself is an educative process

Faculty

> If book funds get tight -- then faculty should play a greater role in selecting
>
> At the academic level -- the librarian should select; at the research level -- the faculty should select
>
> At all the good libraries I've ever been at, the books were selected by non-professional librarians; e. g., English professor, history professor
>
> At a small school the users should select; at a large university, the science subject-specialist should select

Administration

Sees issue as a resource allocation problem; librarian has the final say

Prefers automatic acquisition for current imprints and faculty doing the selecting for retrospective purchases

Having library do the selecting would relieve the faculty of the burden of 100,000 decisions a year

Inspection of the tabled data shows that all three of the basic categories of "who should do the selecting" were used by all five groups, i.e., some faculty members said the librarians should do it, some librarians said it should be done by the faculty, and the administrators and faculty/library chairmen spoke in terms of both the library and the faculty doing the job. Thus it can be said neither of the two major groups (librarians and faculty) is unanimous in his convictions; the same may be said of the administration.

However, each group can be described in terms of a general tendency to award the responsibility either to the librarians or to the faculty. The administrators generally decided in favor of the faculty. In a direct comparison of the two groups, 5 (29%) of the 17 administrators favored the faculty as compared to 2 (12%) in favor of the librarians. Ten (59%) of the 17 administrators opted for joint responsibility, but even here the majority placed major selection activity in the hands of the faculty. The faculty/library committee chairmen followed the same general line as did the administrators in placing the responsibility with the faculty except that they were more specific as to the role played by the librarians; namely, selecting reference works.

The data indicate that the faculty takes a less moderate approach to the question; 93 (52%) felt that selection is the almost sole responsibility of the faculty. Those who voiced approval of a joint responsibility arrangement were the minority; even within this minority, many chose the particular joint arrangements which gave the faculty the major selection role.

The librarians, for the most part, seek a joint responsibility arrangement -- but within this category they are quite divided among themselves as to whether they or the faculty will have the major selection role.

In summary, most of the groups interviewed were in favor of the faculty playing the major selection role in either an unaided or a joint arrangement. The faculty appear to be more united in their opinion that selection is their responsibility than are the librarians.

While many reasons are cited for the various positions taken by the five groups, clusters of reasons emerge. Reasons for faculty dominance in the selection role center about their acknowledged expertise and their greater awareness of their own needs and those of the curriculum. Justification for librarian dominance is sought in their custodial role which provides them with a greater awareness of the need for continuity and comprehensiveness in the collection; the other major rationale was of an administrative nature: they are charged with this responsibility and possess budgetary control.

Q. What factors enter into the faculty's decision to select a title?

The following factors were cited by 175 faculty members:

Subject matter, its relevance to area of interest -- 85%

Author's reputation -- 54%

Quality of material -- 19%

Publisher's reputation -- 17%

The level of the material -- 16%

Recency of material -- 11%

Cost -- 11%

Expected useful lifetime -- 4%

Relation to course interest -- 4%

Q. Do the science departments have written selection policies?

The following responses were obtained from 175 faculty members:

Yes -- 1%

No -- 87%

Not sure or not aware of any -- 1%

Nothing written -- but a policy exists -- 11%

Q. Are science-specific selection practices known to the selectors?

Eight of the 11 head librarians at libraries having science-specific selection practices indicated that the selectors were aware of these practices; one said they were not, and two said the library staff knows but the faculty probably does not.

Q. For which users are the materials being selected?

It appears that for both groups of selectors (faculty and library staff), the student is the primary person for whom material is being selected. More detail is presented below:

Groups for Whom Material is Selected	Responses by Library Staff (n = 43)	Responses by Faculty (n = 175)
Students (unspecified)	82%	82%
Undergraduates	16	32
Graduate students	23	47
Faculty	75	N/A
Themselves (faculty)	N/A	48
Other faculty members	N/A	4
Library staff	12	0
Users external to the university	7	0

Q. What purposes are served by the material the faculty selects?

The faculty members (n = 175) were asked for what purposes they expected their selections to be used. They responded with the following answers:

Teaching and/or classroom use -- 25%

Research needs -- 36%

General reference -- 10%

To round out the collection -- 8%

Unspecified -- 11%

Q. Does the language (e.g., foreign versus English) of the material influence the decision?

One hundred-eleven faculty members were asked this question; they responded as follows:

> Yes, language is a definite factor; order few or no foreign language materials -- 66%
>
> No, language is not a restricting factor; order foreign language materials -- 34%

Of the three sciences represented, biology faculty members reported the highest rate -- 44% -- for ordering foreign materials. Chemistry and physics reported percentages of 26% and 29%, respectively.

Q. Do the various forms of publication influence selection decisions?

The faculty (n = 173) and library staff members (n = 43) were asked to comment on how three general publication forms (hard cover, paperback, and microfilm) influenced their selection decisions. The following responses were obtained:

	Faculty	Library
No preference regarding paperback or hard cover; will order either	26%	26%
Prefer hard cover	46	50
Prefer paperback	7	0
Microfilm is acceptable	20	12
Neutral to microfilm	15	16
Dislike microfilm	35	30
Order microfilm only as last resort	15	14

Q. What selection tools are used?

The faculty members (n = 175) and the library staff members (n = 45) were asked what informational sources they used to know what was available for selection. These sources, herein termed "selection tools," are listed below.

Selection Tools	Used by Faculty	Used by Library
"Flyers"	78%	40%
Publishers' catalogs	23	40
Contact with publishers' representatives	10	0
Book displays at professional conventions	10	0
Reviews in journals	46	18
Ads in journals	32	11
References in professional papers	7	0
Recommended lists	22	4
Contact with colleagues	15	0
Conferences	7	2
Professional library tools	3	71
Acquisition lists of other libraries	2	4

The above table indicates that certain types of selection tools are common to both groups (flyers, catalogs, and ads and reviews in journals); some are "unique" to the faculty (book displays, contacts with publishers' representatives and colleagues, and references in papers); others are unique to the library (general category of library tools); and the remainder are relatively low-usage items. Interestingly, the faculty group uses all of the sources listed, while exceptions appear on the side of the library. However, the category "professional library tools" contains a number of specific sources which would undoubtedly be little known to the majority of the faculty. A more penetrating look at specific selection tools is presented in Lists I and II, which are presented in the Appendix to this report. In these lists are presented the specific titles of serials, monographs, and other tools cited by the faculty and by library staff members, along with an indication of the citation frequency.

Q. Would the faculty members' selections for the past year have been different if they had been at some other institution?

This question was aimed at determining whether a faculty member's selections were specific to him or whether they were influenced by the particular institution where he happened to be at the moment. The question was introduced into the survey after several institutions had already been visited; 130 faculty members responded as follows:

No, would have made the same selections -- 44%

Would possibly change depending upon the institution -- 28%

Yes, my selections would have been different -- 28%

The last two response categories may be combined since they differ only in degree. Therefore, changes in actual title selection might be expected in 56% of our sample were they to change institutions. What specifically would be the factor(s) leading to a change in title selection? The 73 faculty members who indicated changes in their selection provided the following reasons:

Budget consideration: amount of money would change the selections -- 21%

Different research or curriculum emphasis -- 35%

Different selection responsibility or role -- 30%

New collection would have different strengths and weaknesses -- 12%

Unspecified -- 4%

Q. Why might a request be vetoed?

Sixteen (80%) of the 20 head librarians indicated that a request might be vetoed because of a budgetary reason (too expensive or funds exhausted). Other reasons mentioned were:

Question the quality of an item -- 5%

Question the relevance (selected for personal use) -- 35%

Conflicts with policy/practices
  It is a duplication -- 20%
  Periodical not indexed -- 15%
  Item is rare material -- 5%

Unspecified reasons -- 15%

Q. How familiar are the science faculty with the library's holdings in their respective areas?

One hundred and seventy-five faculty members responded as follows to this question:

Very familiar -- 52%

Fairly familiar -- 34%

Not very familiar -- 12%

Based on these figures, it could be said that the faculty are knowledgeable about their respective portions of the total collection. These same people were asked how they acquired or maintained their familiarity with the collection. They replied:

Had selected much of the holdings themselves -- 29%

Browse in the stacks -- 26%

Normal usage -- 18%

Do a periodic inventory -- 3%

Unspecified -- 26%

Q. Were the faculty members of one department familiar with the selection procedures of other science departments on campus?

This question attempted to determine if there was any significant interaction or cross-fertilization among the science departments with regard to selection procedures. One hundred and fifty-six faculty members replied:

Yes, I know what the other departments are doing -- 6%

I assume they are doing the same as we do -- 24%

No, I do not know how selection is handled in the other departments -- 69%

Q. Are there faculty members who do not get involved in selection?

The 175 faculty members were asked if they knew of colleagues in their department who did not get involved in selecting materials. They replied:

No, everyone selects -- 43%

Yes, there are those who don't do any selecting -- 48%

Don't know -- 9%

When asked if they knew of any reasons why these people did not do any selecting, the 84 people who had responded positively to the previous question replied that the non-selectors were:

Satisfied that the job is being done by others -- 37%

"Oldtimers" who are less interested in new developments -- 20%

Apathetic or indifferent -- 20%

Teach only elementary courses and only need textbooks -- 13%

Not active in research -- 13%

Members who have not learned the procedures as yet -- 4%

Q. How much time is spent on book selection decisions in any given week?

The question was asked of both faculty (n = 172) and library staff members (n = 34); the average time estimates were 1.2 hours per week for the faculty and 4.2 hours per week for the library staff members.

Summations made regarding the total time spent within any one department on selection decisions -- i. e., multiplying the 1.2 average by the number of faculty members in a department -- are of doubtful utility in reaching a conclusion as to who is putting more effort and attention into the task. A factor which in effect reduces the high total number of hours spent by all the members of a department is the highly redundant nature of their selection sources; most of the faculty are on the same mailing list for flyers and catalogs, both of which are major sources of selection information. Similarly, the time spent by a library staff member may be divided among several of the sciences, thus reducing the amount of time spent on a particular science to some fraction of the 4.2 hours average; redundancy, however, is not a factor here.

Q. Are the selectors satisfied with their present procedures for selecting science materials?

The three participating groups (faculty, library staff, and Head Librarians) were asked this question; the numbers within each group were 175, 45, and 19, respectively, with the following results:

	Faculty (n = 175)	Library Staff (n = 45)	Head Librarians (n = 19)
Quite satisfied	75%	89%	80%
Dissatisfied	25%	11%	20%

Obviously, the selectors appear satisfied with their procedures. However, an observation made by one of the three interviewers notes that many of the faculty who said they were satisfied seem to say this as a result of not knowing any other way to do the job -- i. e., "yes, I'm satisfied; but then how else could you do it?" This lack of information regarding alternative procedures is partly confirmed by the earlier finding that the faculty members, in the main, do not know how neighboring departments operate in this regard. Useful procedures or good selection tools do not seem to be topics of communication among science faculties.

Q. Are present selection procedures considered to be efficient by their users?

The three user groups were in agreement that present selection procedures were efficient:

	Faculty (n = 174)	Library Staff (n = 45)	Head Librarians (n = 20)
Yes	68%	84%	80%
No	14	11	20
Could not judge	19	5	--

Q. What are the strong points -- as seen by the librarians -- in present selection procedures?

The following features were cited as strong or beneficial points by the staff members and head librarians:

	Library Staff (n = 46)	Head Librarians (n = 20)
Comprehensive coverage, miss very little	20%	15%
Relevance of acquired materials; we get what is needed	26	35
Speed of acquisition	15	20
Procedures encourage faculty involvement	11	40
Selectivity of coverage -- meets needs of our users	11	15
Economical use of available funds and manpower	7	5
Has no strong points worth mentioning	11	5

The remaining comments were of the one-per-person type and differed between the two groups. They are presented in terms of the originating group.

Head Librarians

(Re Abel Plan) Better judgment possible when selector can actually examine the material; the faculty's willingness to do the selecting is a strong point; our highly competent department librarians are strong features; good bibliographic apparatus

Library Staff Members

(Re Abel Plan) Ability to see the book before buying it; the information we route to the faculty; flexible ordering procedures exist between faculty and library; our division of selection labor: library selects undergraduate materials; faculty selects graduate and research materials; having approval/veto authority insures that librarian stays above order-clerk level; one person in charge of selection for an area provides good control; a "book-minded" faculty library representative; library can step in and provide continuity if a department doesn't do its selection job.

Q. What are the strong points -- as seen by the faculty -- in the present selection procedures?

One hundred and seventy-five faculty members cited the following points as strong or beneficial aspects of their present selection procedures:

Library sensitive to needs of faculty -- 23%

No strong points worth mentioning -- 19%

Relevance: we get what we need -- 17%

Good faculty/library interaction -- 11%

Procedures entail minimum amount of faculty time -- 8%

Comprehensiveness of coverage -- 5%

Economy in use of available funds -- 5%

Responsiveness and initiative of library staff -- 5%

Speed of acquisition -- 4%

Collection evaluation: we know what we have -- 3%

Selectiveness of coverage -- 1%

Q. What are the weaknesses -- as seen by librarians -- in th present selection procedures?

The following weaknesses were cited by the 44 library staff memb and 19 head librarians (of these, 4 head librarians and 7 library staff members said no weaknesses were apparent):

	Library Staff (n = 44)	Head Librarians (n = 19)
Not comprehensive enough; gaps and biases exist	18%	32%
Not selective enough	7	16
Slowness in acquisition	2	11
Uneconomical in use of funds and time	2	--
Not enough involvement of faculty	7	11
Responsibility is too diffuse, too scattered, not enough coordination	5	--
Consumes too much time of library staff in routine duties	5	5
No real check done on appropriateness of acquisitions	--	5
Inefficient procedures for retrospective acquisition	--	5
Disinterest or lack of time on faculty's part	7	5
Lack of science specialist	7	11
Aggressive faculty selectors may overbalance a collection	5	--

The following weaknesses were each mentioned by single individuals of the library staff: faculty too conservative in their selections, should put more trust in subject-specialist; not enough time given to selecting; coverage of foreign materials is incomplete; selection activity varies greatly from department to department; collection may not meet needs of the students; greater leniency in accepting material when it is already in library on approval; Abel Plan does not include enough Congress and proceedings type materials; Abel Plan does not currently include coverage of foreign language materials; considerable clerical work needed to run a one-time check on efficiency of Abel Plan; not enough time to check approval books against critical reviews or other selection tools; have no good method for weeding "dead wood" out of the collection.

In response to a somewhat similar question regarding selection policy and practices, the Head Librarians mentioned other weaknesses which are appropriate to note here:

Unevenness in coverage (among departments, etc.) -- 23%

Lack of staff (overall--numbers, etc.) -- 20%

Inability to cover peripheral areas (or from peripheral sources) -- 13%

Lack of staff with science backgrounds -- 10%

Lack of funds -- 10%

Q. What weaknesses are seen by the faculty in their present selection procedures?

Thirty-three (19%) of 175 faculty members said there were no weaknesses worth mentioning. Others (n = 142) cited the following points as being weaknesses in their selection procedures:

Inadequate Coverage

Not comprehensive enough -- 13%

Poor quality or selectivity -- 4%

Inappropriate emphasis;
irrelevant materials present -- 3%

Inefficient Procedures

Acquisition too slow -- 12%

Wasteful of funds -- 1%

Non-cooperation on part of library staff;
little faculty involvement -- 5%

Little sensitivity to faculty needs -- 1%

Requires too much time -- 4%

Fails to provide a check on adequacy of
collection; we don't know what we have -- 6%

No weaknesses worth mentioning -- 19%

Additional faculty comments included the following: a weakness is that is rests on one person; can get over-represented in one field; no release-time for library representative, sloppy job results; lack of feedback--don't know if book was ordered until it is received; collection takes on definite flavor when too few are involved; selection is done in a hurry and at the last minute.

Q. What suggestions do librarians have for improving the selection process?

The Head Librarians and library staff members put forth the following suggestions:

	Library Staff (n = 46)	Head Librarians (n = 20)
Acquire bibliographers (coordinators, collection developers)	2%	15%
Acquire science-reference specialists	22	15
Acquire more clerical help	7	5
Acquire and use better selection tools	4	15
Involve the faculty more in selection	11	5
Involve the library staff more in selection	4	10
Improve flow of information between faculty and library	15	10
Acquire more funds for selection activity	11	5
Institute more automatic ordering	7	15
Library should be better informed on plans of departments and institution	7	--
Each department should have a liaison faculty member responsible for selection	4	--
Develop and use more and better standard lists	--	15
No suggestions	22	35

The library staff had the following additional comments: increase pre-publication orders; more involvement of graduate students in selection; compile a "selection thesaurus" from key words abstracted from curriculum catalogs, i.e., course descriptions; scan calendars of science organizations and write for resulting publications; develop method for evaluating usefulness of a book; be able to check "approval" books against available reviews; provide release-time for faculty selectors; use them as step toward subject-specialists; standardize format and content categories of publishers' "flyers."

Q. What suggestions do the faculty have for improving the selection process?

Faculty members (n = 175) provided the following suggestions (40 members [23%] had none):

Develop better cooperative mechanisms between faculty and library including more systematic information from library to faculty and vice versa -- 6%

More money and a clearer allocation of funds to the department -- 19%

Provide more and/or different types of library staff -- 15%

Better screening systems for selecting the best materials -- 12%

Better cooperation within the department on selection activity -- 6%

More blanket orders -- 4%

Modify or eliminate blanket orders -- 2%

Provide release-time for selection activity -- 2%

Q. What feedback is given to a requestor by the library?

It seems appropriate to conclude the section on the title selection decision by noting what kind of feedback is given to the requestor:[*]

Notice of arrival -- 89%

Notice if library already possesses the requested item -- 42%

Notice of approval or disapproval -- 11%

Notice of arrival only if requested -- 5%

No specific arrival notice; only provide regular acquisitions list -- 11%

Information Related to Decision Making

A number of questions were asked which illuminate the environment in which the decision making takes place, the role and attitudes of the decision makers, and some problems which are relevant to more than one of the preceding decision levels. Such information is presented in this section.

Q. What are the functions of the institution?

Since the library was seen to take its functions in many cases from those of the institution, the administrators (n = 17) were asked what they saw as the functions of their institutions. Twelve (71%) replied that the aim was to provide a broad, basic education in the liberal arts tradition. A second major function was seen by 6 (35%) as being the conduct of research and preparing people for research careers. Graduate level education (n = 5, 30%) and preparing people in the professions (n = 2, 12%) was another major grouping. Two (12%) of the 17 administrators stated that the institution's primary function lay in providing basic education in engineering and the sciences. Providing quality teaching and preparing people for teaching careers were mentioned by 4 (24%) and 3 (18%) administrators, respectively. Four (24%) responded that a special function was to be responsive to the needs of the state, i. e., public service function, while one administrator cited the additional function of serving the broader professional and scientific community. Lesser mentioned functions included: educating deprived minority groups; aiding other community colleges in the state, and providing pre-professional training.

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[*] Based on responses from 19 Head Librarians

Q. What are the functions of the library?

The following groups responded to this question: head librarians, faculty members, faculty/library chairmen, and administrators.

RESPONSES	H. L. (n = 20) %	FAC. (n = 175) %	F/L (n = 16) %	ADMIN. (n = 17) %
Provide and store information for:	25	--	--	23
Research, by faculty and/or students	25	19	50	47
Teaching, education, orientation, "broadening," etc.	20	17	19	23
Serve as a major educational resource, e. g., "heart of the university"	25	8	13	53
Serve as an ancillary educational resource to established curriculum	25	11	6	18

(What are the functions of the library, cont'd)

RESPONSES	H. L. (n = 20)	FAC. (n = 175)	F/L (n = 16)	ADMIN. (n = 17)
	%	%	%	%
Provide access to store of information	25	--	25	6
Provide adequate circulation procedure	--	8	--	--
Provide reproduction and interlibrary loan service	--	18	--	--
Provide active support of faculty/student goals	25	--	19	12
Provide bibliographic and reference services	5	7	--	--
Provide course-specific or research project-specific material (implies above and beyond routine provision of store of information; implies purposeful faculty/library interaction	10	13	6	--
Serve as a study facility for students	20	6	13	--
Serve as a cultural (e. g., museum, "shrine of human knowledge") source	10	2	6	6
Make information available to serve and support all citizens of the state and/or general community	25	2	6	12
Serve as a source for non-academic (recreational) information (popular books, magazines)	20	2	--	--
Instruct or orient students in uses of library	15	2	6	--
Act primarily as a service organization	15	2	13	24

Although a variety of responses were given, the responses of all groups tend to cluster around the provision of information in support of research or the curriculum. As might be expected, the head librarians more often mentioned other functions.

Q. Does the library fulfill its perceived functions?

There is widespread agreement (75% - 85%) among most of the three groups that their libraries are fulfilling the functions attributed to them. The complaints rest mainly with the collection itself and access to it. Relationships or interactions between faculty and library received relatively little criticism -- yet, as the investigation of the selection process has shown, the materials end up in the collection as a result of human decisions and interactions.

Relevant data are as follows:

	H. L. (n = 20)	FAC. (n = 175)	F/L (n = 14)
	%	%	%
Yes; quite well	40	45	36
Fairly well	45	33	43
No; not well	15	11	21
Major complaints: holdings (comprehensiveness, depth, relevance, emphasis, etc.)	20	13	21
Accessibility	--	16	14

Q. What must the institution do to ensure that the library collection is able to meet the demands placed upon it?

The faculty/library committee chairmen and the administrators provided the following responses to this question:

	F/L (n = 16) %	ADMIN. (n = 17) %
Provide money -- funds for expanding budget costs, etc.	69	65
Support and aid faculty to know and make known their views on library needs	44	53
Support library staff:	25	35
Acquire sufficient staff	6	12
Acquire types needed for selection and collection development	6	6
Help staff acquire needed materials	6	6
Help staff help faculty choose materials	--	6
Help staff make materials accessible	--	12
Facilitate communication of needs to administration from faculty to library	13	12
Obtain objective data (for assessment, obtaining support, "selling" others on needs, etc.)	6	18

There is almost no disagreement between the groups as to the general steps to be taken by the institution in promoting the collection. Money is seen as the primary ingredient and is followed closely by supportive efforts of both the faculty and the library staff. However, in view of the fact that 14 (74%) of 19 head librarians reported that their staff levels were not adequate to their needs, the relatively small numbers of both groups who spoke to this point appear to indicate either the librarians have not communicated to the faculty or the administration the need for personnel or the message is going unheeded.

The same emphasis on funds but not staff is seen in responses to the question: "Is appropriate support and attention being given to the library?"

	F/L (n = 16) %	ADMIN. (n = 17) %
Yes	38	18
Yes, but some qualifications	25	47
No, quite dissatisfied	38	35
Major Complaints		
Funds	38	41
Space, facilities, services (backlogs)	19	12
Staffing and/or salaries	25	6
Collection (too small, poor coverage)	13	18

Q. What is the relationship between acquisition funds and staffing?

The prospect of additional funds has implications for the staffing of the libraries. In this regard, 14 (74%) out of 19 libraries said that their present staffing levels were not adequate for their needs; 5 libraries (26%) felt that their staffing levels were adequate. The general categories of personnel needed as cited by head librarians were as follows (n = 14):

Catalogers -- 50%

Selection specialists/bibliographers -- 43%

Clerical -- 43%

Unspecified professionals -- 29%

Automation specialist -- 7%

It appears obvious that in some cases the additional funds could place a strain on the staffing level of a library. In an attempt to probe this issue, the librarians were asked what amount of additional book acquisition money would necessitate an increase in their staff; it was further assumed that such additional funds would be available on a continuous basis. Eight of the librarians could provide no estimate. Six responded with a specific dollar amount which ranged from $5,000 to $100,000 (this wide range reflects the similarly wide range in size found among the sample itself). Two librarians responded with formulas which said: "Every $100,000 of book money requires $50,000 for staff," and "Every $35 of book money requires $55 for staff." Three librarians preferred to state the issue in terms of books; their estimates ranged from 1,000 to 2,000 books as being a figure which would require one additional staff member. Despite the variability among the respondents, there is the general indication that some proportion of the present book fund would necessitate a staffing increase. This generalization, however, may not hold among the larger libraries for several reasons. The presence of the computer and other automation devices has tended to offset the increasing need for clerical help while automatic acquisition plans (standing orders, the Abel Plan) and a trend toward pre-cataloged books serve to reduce pressure on professional staff members. These points arose in discussion with those small number of libraries in the sample who were currently availing themselves of these innovations; due to the smallness of the number and the tangential nature of the issue, these points are cited only as being suggestive of a trend which may invalidate existing rules of thumb on book-money-to-staff ratios.

Q. What functions are performed by Faculty/Library Committees?

The chairmen of the 17 faculty/library committees were asked what functions their committees performed. In 3 (18%) of the cases, the committee reported it was more than advisory in its relation to the library, i.e., it had decision-making powers. The broad categories of activities engaged in included: liaison, budget allocations, major personnel decisions regarding the library, philosophy of selection responsibility, and planning for new library facilities. More detailed breakouts within these categories are provided below for the 17 committees:

Liaison between library and faculty -- 59%

Liaison between library and administration -- 12%

Involved in book fund portion of budget -- 12%

Involved in following personnel decisions regarding the library:

New positions -- 6%

Staff salaries -- 24%

Hiring -- 6%

Development of selection responsibility philosophy -- 6%

Planning of new library facilities -- 18%

Q. What is expected of the Head Librarian regarding the library's functions?

A different look at the library's functions was obtained by asking the chairmen (n = 15) and the administrators (n = 17) the following question:

> "Assume that your present librarian was lost to you and that you (the committee) were involved in selecting a new librarian. What points might be stressed in discussing the library's function(s) with a prospective librarian?"

Points Stressed	By F/L (n = 15)	By ADMIN. (n = 17)
Relationship with faculty	27%	65%
Budgeting, administration, and organization capabilities	47	35
Service aspects of library (make materials and services accessible)	33	35
Philosophy:		
In line with tradition here	--	24
Innovator, modern concepts, automated methods	13	24
Selection responsibility (help assess and build collection)	20	18

Points Stressed (cont'd)	By F/L (n = 15)	By ADMIN. (n = 17)
Leadership (spokesman; internal and external stature as representative)	13	12
Flexibility	--	12
Interest in subject fields and research in them	--	6
Relationships with students	7	6
Impartiality (ability to withstand pressures from special groups, doesn't play favorites)	27	6
Administration relationships	--	6

Inspection of these data indicate agreement among both groups as to the need for administrative capabilities on the part of the librarian and a prominent service function regarding the library. The administrative emphasis does not extend completely across the spectrum since a much smaller percentage of the respondents desire leadership or spokesman qualities in the prospective librarian. The administration appears more concerned about the librarian's philosophy being in line with the institution's traditions than do the chairmen who did not cite it. Small portions of both groups seek the innovative librarian who will promote advances in the field. The two groups differ markedly in the emphasis placed upon maintaining good relations with the faculty; curiously, it is of greater concern to the administrators.

Q. What are the major selection-related problems facing the Head Librarians?

Four out of 20 head librarians stated that there were no major problems in the selection areas covered by present practices/policy. The remaining librarians cited a range of problems (n = 16):

Funding and budget situation -- 25%

Getting the faculty active -- 19%

Lack of clear policy -- 13%

No balancing function performed by the
library in regard to the collection -- 13%

The following were each mentioned by one head librarian: growth in volume of materials; pressure toward greater decentralization of selection responsibility, central holding; lack of communication between faculty and the library; coverage of interdisciplinary areas -- not picking up all good material, faculty complains that material of secondary value is also acquired, no formal check on whether policy is being followed, new faculty do not know about policy.

OBJECTIVE COLLECTION DESCRIPTION (OCD)

All of the interviews conducted at the 20 institutions were designed to achieve a comprehensive description of the selection process. To complement this, a similar description was needed of the output or result of the selection process, i. e., the collection -- more specifically, those portions of it which were relevant to the sciences.

Four methods were used to describe the science collection: two involved the traditional technique of comparing the collection against basic lists of books and periodicals in each of the sciences (see Appendix B); the remaining two involved acquiring data (number of books and dates of publication and acquisition for a sample of this number) for a group of selected topics. The topics themselves were of four types: (1) standard topics -- those which have had an established lifetime of 30 or more years;

(2) recent topics -- those developed within the last ten years; (3) strong teaching topics -- topics chosen by the science department chairmen as ones in which their particular department was strong in terms of teaching; and (4) weak teaching topics -- those judged by the same chairmen as being not taught extensively or at all in their department.

For each topic the interviewer determined the total number of books which were primarily relevant to it. He then selected a sample of 15 titles from that total and recorded the date of publication and acquisition for each one. It was not possible to obtain all of this information at each library since some libraries do not record accession dates.

Basic Book List Data

For each of the three sciences, a basic book list[*] was checked against the card catalog at each library. In a final analysis, the 20 libraries held an average of 63% of all books cited on the three lists. Figure 6 presents a more detailed distribution of this finding. (See page 71.)

Basic Journal Data

A similar procedure was followed for the periodicals or journals; a basic list[**] for each science was checked against the holdings of each library. In this case, however, more detailed information was obtained.

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[*] Compiled by selecting "first" and "second" priority books from the AAAS Science Book List for Young Adults (1964) for each science. These are not designed to give a library more than a "starter" collection.

[**] Compiled from lists issued by the appropriate professional society--certain infrequently-held journals were not included.

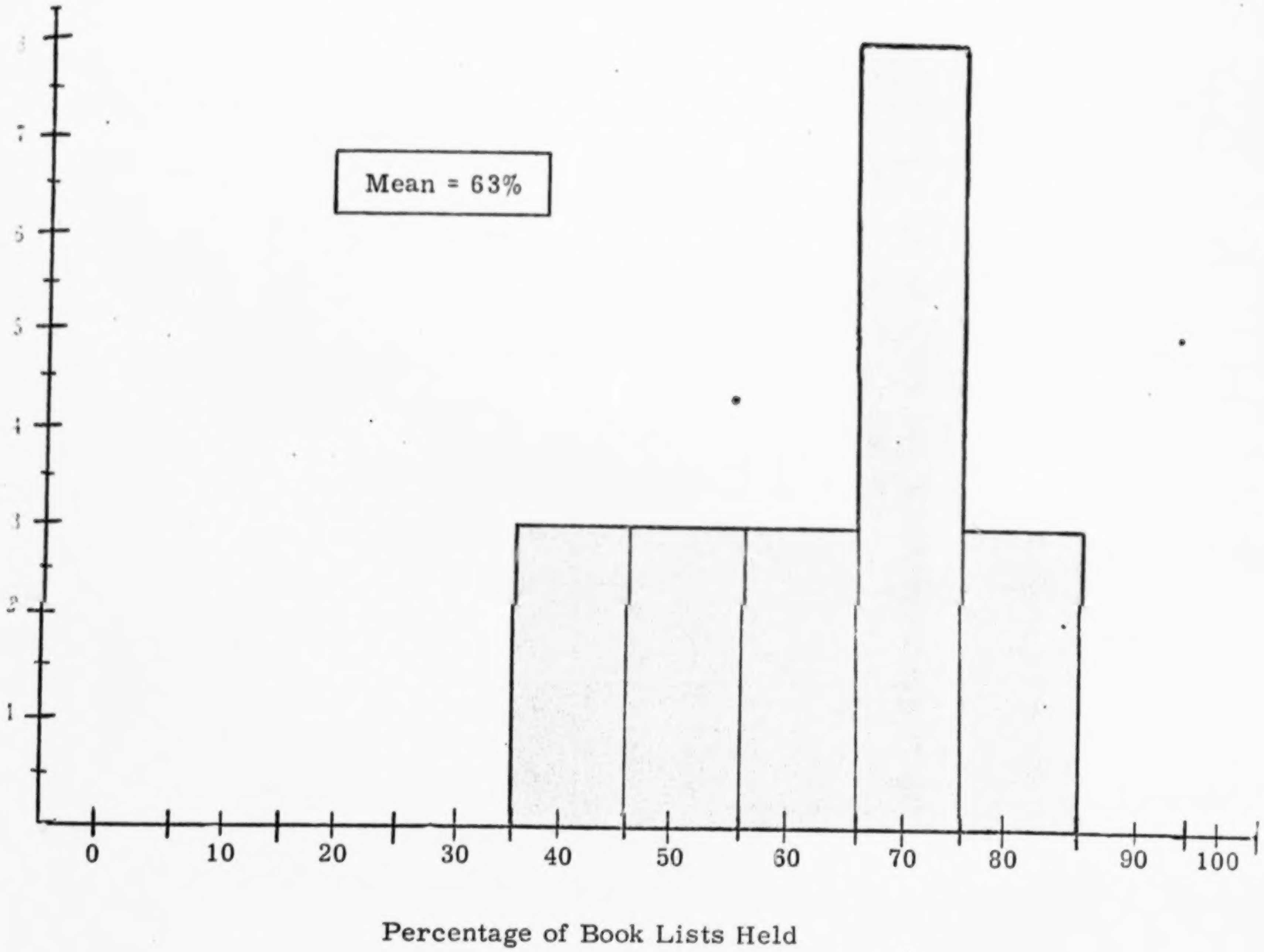

Figure 6. Distribution of the 20 libraries in terms of the percentage held of the basic book lists

It was noted for each journal whether or not it was held and a record was made of the total holdings in terms of volumes and specific years. The more detailed nature of these data permitted more descriptive measures to be made than was the case with the basic book list; an explanation of each measure is provided below, along with the average results for the 20 libraries.

Percentage of the list held

On the average, the 20 libraries held 81% of the journals cited on the lists.

Percentage currently subscribed to

On the average, the 20 libraries currently subscribed to 79% of the journals cited on the lists.

Percentage of years held

By adding the number of years each journal had been published, the total number of years of publication for all of the list journals was determined. This figure equaled 2,670 years of publication for 71 journals. A similar figure was obtained for the journals held by the libraries. On the average, the libraries held 65% of the total years of publication for the list journals. This percentage may be viewed as one type of completeness index.

A second type of completeness index deals only with the completeness of the journals held by each library; i.e., the "years publishe figure is now unique for each library, reflecting only those journals actually held by that library. The average percentage held across all libraries on this measure is 75%.

Percentage of critical period

One estimate for usage of science periodicals is that 75% of the information in use today is contained within the last 10 years of publications. A 10-year period was chosen as "critical" and analyses were made to determine what percentage of the critical period was held by each library for the journal cited on the lists. (If a journal existed for less than 10 years, its entire life span was taken as the critical period.)

On the average, the libraries held 76% of the "critical period" issues for the journals listed. When the same analysis was made for only those journals actually held, the average across all libraries rose to 89%.

Holdings By Selected Topics

The basic information dealt with in these analyses was the number of volumes held by a library on certain types of topics within each science. The average number of volumes across all libraries for each type of topic is given below:

Standard Topics ---------- 336 volumes

Recent Topics ------------ 277 volumes

Strong Topics ------------ 451 volumes

Weak Topics ------------- 223 volumes

It can be seen that when the sample is viewed as a whole, the average number of volumes for the various types of topics bear a logical relative relationship to each other. Books in standard (and older) topics outnumber those in recent topics. Topics selected by department chairmen as being strong teaching topics at an institution contain more than twice the number of volumes than do topics selected as weak teaching areas. Less conventional findings appear when the averages are cited for these same topics within each of the sciences; such data are treated in a later section.

Acquisition Gap Data

Part of the urgency surrounding the literature of the sciences stems from the rapid obsolescence such material experiences. Relevant to this point are the analyses conducted in this study on the interval or "gap" occurring between the publication of a book and its acquisition by the library. The basic data upon which gap analyses were performed consisted of two dates obtained for each of the books sampled in the four types of topics just discussed. That is, each time a total for a particular topic within a science at a library was made, a sample of 15 titles within that total was taken.* Where it existed, the date of acquisition and the date of publication for that title were obtained. A total of 1,518 "paired dates" were obtained across the sample libraries. The gap for each of these pairs was obtained by subtraction. On the average, the gap for all sciences across all libraries was 2.8 years.

ANALYSES BY INSTITUTIONAL TYPE

The sample institution had been selected on the basis of certain institution dimensions or characteristics, e.g., size, ownership, growth rate, location. Were such institutional differences related to differences in the selection process and its outcome? Basically, the question may be answered by an analysis which divides the sample institutions into "X" types and views the data in terms of the new groups; summary statistics are then computed for each of the types.

The sample institutions were grouped according to size, ownership and growth rate. With the exception of one large, private university and one small state university, it was found that the sample institutions were divided the same way on the basis of size and ownership, i.e., there were large state and small private institutions. Thus, these two dimensions were merged (the two exceptions were not considered in this analyses) and the universities fell into the following institutional types:

	Stable	Developing
Large State	7	1
Small Private	7	3

It was decided to compare (1) state-owned/large/stable (SLS) institutions with private/small/stable (PSS) institutions and (2) developing institutions with stable institutions. These results are presented below.

STATE/LARGE/STABLE (SLS) INSTITUTIONS VERSUS PRIVATE/SMALL/STABLE (PSS) INSTITUTIONS

These analyses contrasted stable growth rate institutions which differed from each other in terms of size (number of students) and ownership, with seven falling into each group. The six remaining institutions were not considered in the following analyses.

Decision Making in PSS versus SLS Institutions

An examination was made of the ways in which the various institutional and selection types responded to selected questions on basic decisions. Major differences or main points of agreement are discussed; neither all of the questions nor all of the responses to them is covered in the same detail as in earlier sections.

The SLS head librarians (n=7) appear far more dissatisfied with the way in which their library allotments are determined than are their PSS (n=7) counterparts (57% vs. 14%). Their primary complaints (43%) in this regard center about the high degree of subjectivity in the budget determination procedures, i.e., lack of objective data upon which to make decisions. The PSS head librarians, 6 out of 7 (86%) of whom were very content with the procedures for this decision, stress as contributing factors the close coordination with the administration (57%) and the faculty and department inputs (43%).

This budgetary dissatisfaction on the part of the SLS librarians did not carry over to the allocation decision. Both groups were mainly satisfied (SLS -- 71%; PSS --86%) with their procedures, but differed on the strong points; the PSS librarians prized the variety of inputs and broad discussion (50%) attending this decision, whereas the SLS people looked favorably on the flexibility (57%), e. g., non-formula, aspect. Similarly, both groups cited rigid rules as weaknesses (PSS -- 40%, SLS -- 33%).

Selection Process

The SLS institutions are more nearly divided between Faculty Dominant and Library Dominant* processes (43% to 57%) than the PSS institutions, of which 86% are Faculty Dominant.

SLS and PSS Head Librarians were generally content (6 out of 7 [86%] in both groups) with their present selection processes. Indeed, the major participants in the process -- the library staff members and the faculty in both types -- expressed high satisfaction (in the 85% to 90% range) with current procedures. It should be noted that the faculty's expression of satisfaction is primarily germane to the process as it exists within their own departments. That is, both participants can be satisfied -- but unless theirs is a highly interactive process, the faculty and the library staff can be commenting on their own procedures which may differ radically.

General Comments

Certain of the comments of the administrative and faculty/library personnel of the SLS and PSS institutions are of interest. The administrators within both groups (n=7 each) agree on the actions that should be taken in support of the library; these include the provision of money and support (SLS -- 50%, PSS -- 83%) and aid to the faculty to know and make known their views on library needs (SLS--50%, PSS--67%). Only the SLS (n=[illegible]) administrators made fleeting reference to support of the library staff by acquiring additional staff (17%) and, more specifically, subject-specialists (17%). Dissatisfaction with the support presently being given to the library was a minority view in both groups; the SLS administrators being more critical (40%) in this regard than their counterparts (20%). The primary complaint by the administrators in both types was insufficient funds (60% for each).

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*See page 32 for definition

The faculty/library committee chairmen in the SLS (n=7) and PSS (n=7) institutions felt that their libraries were fulfilling their perceived functions to a very high degree (100% and 83%, respectively). Their perceptions of what actions must be taken by the institution to support the library parallel those of the administrators; money received primary mention (SLS -- 60%, PSS -- 100%) with support and aid to the faculty being second (SLS --60%, PSS -- 40%). Support for the library staff as a needed action received little emphasis (one comment in each case). While there is agreement of what should be done, 40% of the SLS chairmen were dissatisfied about what was being done (PSS chairmen, with minor qualifications, were satisfied). The complaints voiced by the SLS chairmen included: lack of general support by the administration (40%), and lack of space, facilities, and services (40%).

In general, the administrators and the faculty/library chairmen of the SLS and PSS institutions took a two-dimensional view of their libraries, one dimension being financial and the other some aspect of faculty satisfaction/support. Small numbers within each of these groups, principally in the SLS institutions, were concerned about matters beyond these dimensions, e.g., support of the library staff, but it was not a dominant concern.

Basic Book List Data

The 7 SLS institutions held an average of 71% of the science books listed on the basic list, as compared to an average of 58% held by the 7 PSS institutions.

Basic Journal List Data

Figure 7 presents a comparison of the SLS and PSS institutions for the 6 measures derived from the journal data. It can be seen that the SLS institutions had better performance than the PSS institutions on 5 of the 6 measures. More specifically, the SLS type excelled the PSS type in the following ways: held a higher percentage of listed journals (90% vs. 75%); were currently subscribing to more of the listed journals (86% vs. 75%); held more of the total years of publication for the listed journals (75% vs. 63%); were more complete in the listed runs held (82% vs. 79%); and held a higher percentage of the total possible critical period (83% vs. 72%). Thus it may be said that, of the recommended list of journals, the SLS-type institutions held more, currently subscribed to more, were more complete in what they held, and held more of the total possible critical period than did the PSS-type institutions. While they hold fewer recommended journals, the PSS institutions tend to have a higher percentage of the critical period for those they do hold than do the SLS institutions (94% vs. 91%).

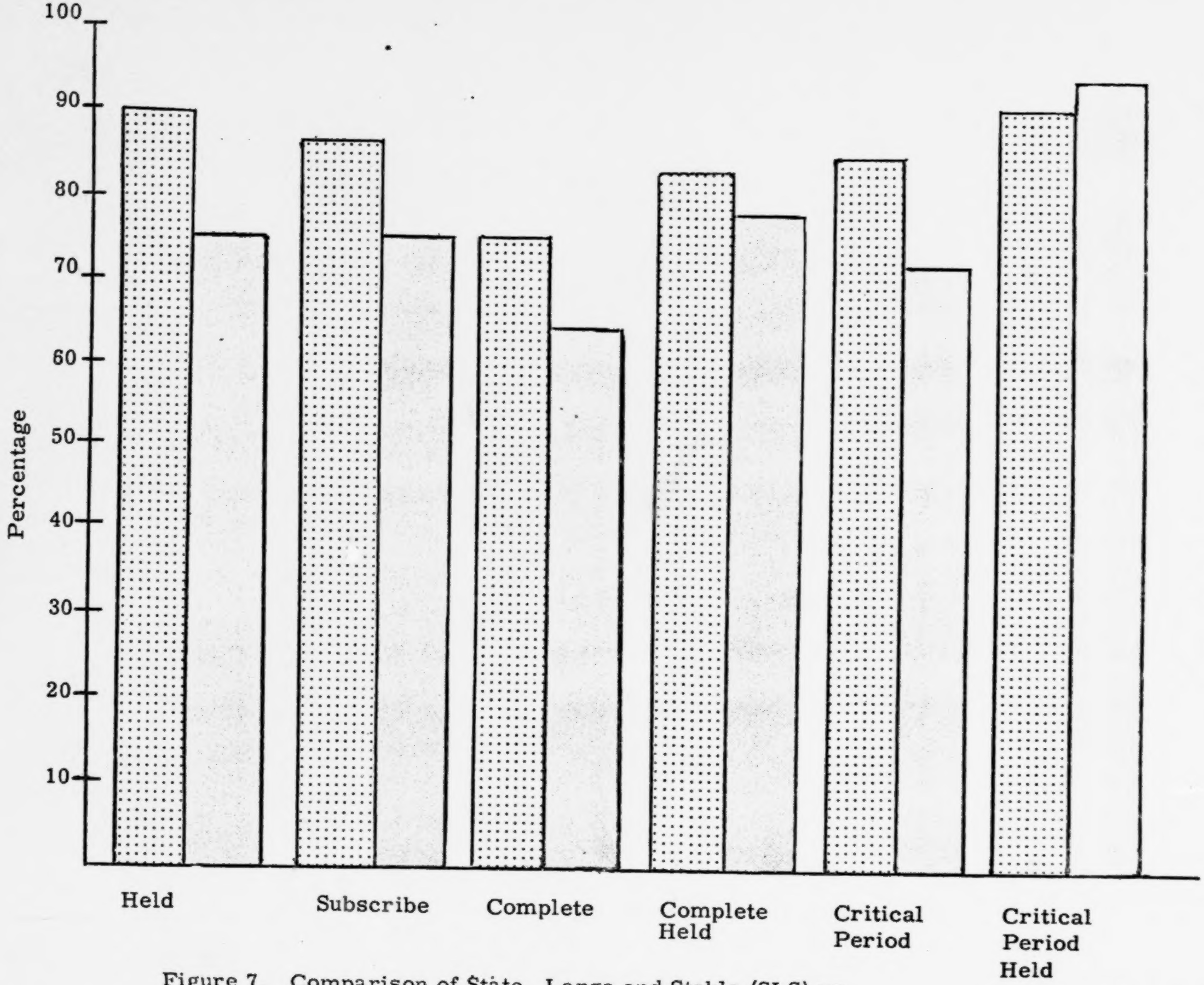

Figure 7. Comparison of State, Large and Stable (SLS) vs. Private, Small and Stable (PSS) Institutions Along Several Journal Analysis Dimensions

Books Held in Sample Topics

For the four types of topics sampled combined (standard, recent, weak, strong), the SLS institutions held more books than the PSS institutions (SLS mean = 1,768, PSS mean = 776). This finding might be expected since the larger schools have larger budgets and larger libraries. However, further analysis indicates some interesting differences that cannot be accounted for solely on the basis of size.

The SLS institutions had on the average more books in the recent topics than in the standard topics sampled, while the PSS institutions had more books in standard than recent topics. (The same recent and standard topics were used at all institutions.) The mean number of books found in three recent and three standard topic areas are as follows:

	Recent	Standard	R/S Ratio
SLS	430	332	1.30
PSS	132	156	.85
Difference	298	176	--

Looking at it another way, the SLS institutions had about 2 times as many books than PSS institutions in standard topics, but about 3 times as many books than PSS institutions in recent topics. This difference can perhaps be most straightforwardly shown by eliminating the differences in the observed data due to more books being held at SLS institutions.

Considering the total number of books found in recent and st ard topics combined, the relative holdings within each institutional ty are as follows:

	SLS	PSS
Recent	56%	46%
Standard	44%	54%
Total	100%	100%

This further illustrates the finding of relatively more recent holdings at SLS institutions, and relatively more standard holdings at PSS institutions.

The differences between SLS and PSS institutions are even m striking when one looks at the mean number of books found in weak a strong teaching areas. (The reader is reminded that these were "w and "strong" teaching areas identified for each of the three science d partments within each institution.)

	Strong Teaching	Weak Teaching	S/W Ratio
SLS	741	265	2.8
PSS	265	223	1.2
Difference	476	42	--

The average holdings in weak areas were almost the same for PSS and SLS institutions but the SLS institutions had almost 3 times as many books in strong teaching areas. The PSS institutions had about 20% more strong teaching area books than weak teaching area books, while the SLS institutions had almost 3 times as many strong as weak.

Considering the total number of books found in strong and weak topics combined, the relative holdings within each institutional type are as follows:

	SLS	PSS
Strong	74%	55%
Weak	26%	45%
	100%	100%

This further illustrates the finding of greater holdings in strong than in weak topics at SLS institutions and an almost even split at PSS institutions.

In summary, then, SLS institutions had more books in the four kinds of topics sampled and showed both absolutely and relatively greater holdings in recent and strong topics.

Availability Gap (AVG) Data

The term "availability gap" (AVG) refers to the time interval between the publication of a book and the point at which it is acquired by an institution. It is recognized that there are two general types of acquisition activity: (a) acquisition of current materials, and (b) retrospective collecting. In our analyses, the AVG data were treated separately for each type. Based upon inspection of the AVG data, retrospect collecting was defined as acquiring a book which was more than fiv old when it was acquired.

At the broadest level, the AVG may be looked at for both S and PSS institutions over a relatively long time period: from 1936 t 1967. The average time between book publication and acquisition wa years at the SLS institutions and 1.9 years at the PSS institutions. T it can be said that science books of the types sampled here are acqu sooner after publication at PSS institutions than at SLS institutions.

For the next AVG analysis, examination of the data was lim to the last six years (1962 - 1967) in order to draw conclusions most appropriate to current selection processes. Since materials acquir any one year are a mixture of current and retrospective selections, s arate AVG analyses were conducted. The results and a discussion o these analyses follow:

1962 - 1967	PSS	SLS
Total Sample		
Number of Books	274	403
Mean AVG	1.6	2.2
Current Acquisitions		
Number of Books	235	346
Percent of Sample	95	90
Mean AVG	1.3	1.3
Retrospective Acquisition		
Number of Books	12	39
Percent of Sample	5	10
Mean AVG	6.9	9.9

For the 1962 - 1967 time period the SLS institutions still had a longer mean AVG; however, this difference was due to the retrospective acquisitions rather than current selections. There was no difference between SLS and PSS institutions in respect to mean AVG for current selections, but the mean AVG for retrospective collections was about 3 years greater for the SLS institutions.

In other words, the SLS institutions were retrospectively collecting older books than the PSS institutions. There were more retrospectively collected books found at SLS institutions, and these accounted for a greater percentage of the total collection at SLS institutions.

The ratios of 90/10 and 95/5 obtained may be underestimates of the amount of retrospective selecting, because one of the four kinds of topics sampled were "recent" topics in which the opportunity for retrospective collection is more limited (i. e., there are probably fewer old books); however, we can be reasonably certain that retrospective selection accounts for a much smaller portion of acquisition than do current selections.

Summary Regarding Institutional Types

In summary, the analyses presented thus far lead to the following conclusions about our sample:

Institutions which are state-owned, large, and of a stable growth rate performed better in regard to holdings of basic lists of science books and journals than did institutions characterized as privately owned, small, and stable in growth rate. Similarly, these same types of institutions held more material on selected topics in the sciences than did their private counterparts. Materials of a retrospective nature are more recent publications at the privately owned, small, stable institutions, while no differences existed between the institutional types with respect t AVG for current acquisitions. Finally, the great majority of the sitions occurring at both types of institutions during the period sa were current acquisitions as previously defined.

STABLE VERSUS DEVELOPING INSTITUTIONS

The terms "stable" and "developing" are applied here to tw groups of institutions whose recent growth rates differ markedly. As was the case with large institutions being synonymous with "state-ow the institutions classified as developing are also relatively young an have rapidly expanding student bodies. Division of the sample along t above dimensions yields an unequal distribution of 16 stable and 4 developing institutions. Such inequalities possibly provide less meanin comparisons than was the case with the more equally balanced SLS vs PSS analyses; however, it is felt that in an area of virtually no data, e data of a limited nature would be useful.

Decision Making in Stable versus Developing Institutions

Library Appropriation Decision

Ten (63%) of the head librarians at the 16 stable institutions we satisfied with the present way in which the library's total appropriatio was decided, while at the 4 developing institutions they were equally divided. The complaint of "not enough freedom to truly reflect this institution's library needs" received support from 2 (13%) of the head librar at the stable institutions (SI) and 1 (25%) of the librarians at the develop institutions (DI). The DI head librarians also cited as weaknesses the lack of appeal on budget decisions (1 of 4) and the lack of sufficient record-keeping for advanced planning purposes (1 of 4). On the positive side, a point of satisfaction mentioned by both types was close coordination and cooperation with the administrator (stable -- 38%, developing -- 50%). However, an independence of the librarian to assess and reflect overall needs was noted more often by DI head librarians (3 of 4, 75%) than by SI head librarians (5 of 16, 31%).

The acquisition budget decision procedures meet with the head librarians' general approval in both types (SI -- 75%, DI -- 81%). Similarly, there is little disagreement as to the strong points of this decision procedure; the main ones cited were flexibility and variety of inputs. In terms of perceived weaknesses in department allotment decision procedures, 8 (50%) of the 16 SI head librarians stated there were none, as compared to 25% in the DI group. Inadequate information on new programs was a common complaint among a small number of both types (SI -- 14%, DI -- 25%).

The administrators at both types of institutions differed as to the major supporting actions to be taken by their institutions in regard to the library. Three out of 4 of those at the developing institutions saw the provision of funds as the key action; only 4 (29%) of those at the 14 stable institutions replied similarly. The stable institution administrators (n = 14) were more heavily in favor of supporting the faculty to make known their needs (SI -- 57%, DI -- 25%). Following up this point, 3 (75%) of the 4 administrators at the developing institutions were dissatisfied with the support and attention being given to the library; specifically, they cited that the collection was too small (50%) -- a "normal" complaint in view of their newness -- that staffing was inadequate (25%), and that funds were inadequate (25%). It is of interest to note that while at the developing institutions funds were stressed as the most important provision administration could make, only 25% complained about funding. While only a small percentage of the administrators at the stable institutions were dissatisfied (21%), nearly half (43%) felt it necessary to comment on the inadequacy of funds.

Does the faculty agree with the administration that attention must be given to aiding the faculty in making known their library needs? Using the faculty/library chairmen as faculty spokesmen for the moment, a disagreement is found to exist in the stable institutions. On the two points of money or support of the faculty, the 11 faculty/library chairmen at the stable institutions expressed themselves as follows: money, [illegible] support for faculty, 27%. The corresponding percentages for the 14 administrators were: money, 29%; support for faculty, 57%. It appears that the faculty would rather be funded than supported.

All of the faculty/library chairmen (n = 4) at the developing institutions were dissatisfied with the attention and support being given to the library by their administrations. Their complaints centered on inadequate funds (75%); inadequate staffing (50%); and too small a collection (25%). Those at the stable institutions (n = 12) expressed dissatisfaction in only 17% of the cases and cited several minor criticisms which were directed toward the administration.

Do the same statements hold when the focus of attention is placed on the library itself? In general, they do: 50% of the DI faculty/library chairmen (n = 4) felt that their libraries were not fulfilling perceived functions, with criticism being specifically directed at the holdings (50%) and accessibility to them (25%). Only 9% of the 11 SI chairmen were dissatisfied with the library's fulfillment of its functions. (Apparently.

the respondents did not make allowances for the library by saying the administration has not provided the needed effort; praise or criticism is applied equally to both the library and the administration.)

Selection Process

The head librarians at both types of institutions were asked what problems were encountered with their present selection policies or practices. Of those at the 4 developing institutions, 50% cited the lack of a clear policy as a major problem; no one at the 16 stable institutions mentioned this topic. It is likely that something in the nature of an unwritten policy has developed over time at the stable institutions or that less pressure exists for major decisions regarding the makeup of the collection, since these have probably been handled at some time in the past. Interestingly, two of the three institutions having written policy statements are developing institutions. The need for guidance seems to be greater at such places. The stable institutions cited the same strong points as did their counterparts, but with more emphasis; e. g., degree of faculty involvement (stable -- 56%, developing -- 25%) and responsiveness to users' needs (stable -- 38%, developing -- 25%).

The 4 DI head librarians cite a lack of library staff as a major weakness (50%) in their selection process. Of greater concern to those at the stable institutions (n = 16) was the unevenness of the collection (38%) and an inability to cover peripheral areas (25%). An interesting dichotomy between the types is found along the dimensions of collection comprehensiveness and selectivity. Seven of the 16 (46%) SI head librarians complain about the lack of comprehensiveness of their collections, whereas 2 of the 4 head librarians at the developing institutions were critical of the selectivity used in making inputs to the collection. A possible explanation is that the stable libraries have reached a size where hensiveness is a realizable goal and, consequently, a concern; the oping libraries are more concerned with building their collections, quality of input must substitute, for the time being, for quantity.

In terms of satisfaction with their present selection proce the librarian groups were generally content. Three of the 4 head li ians and 8 of the 10 library staff members at the developing institu were satisfied. Similarly, all of the head librarians and nearly all of staff members at the stable institutions were content. Faculty satis tion, however, was higher (81%) at the stable institutions than at the developing institutions (59%).

Basic Book List Data

In terms of percentage of the basic book list held, there was vir tually no difference between the developing and stable institutions (64 63%).

Basic Journal List Data

The 16 stable institutions performed better on all 6 journal mea sures than did the 4 developing institutions. Figure 8 presents a compa son of both groups across all measures.

The stable institutions held a higher percentage of the listed journals (82% vs. 76%); were currently subscribing to more of those lis (80% vs. 74%); owned more of the total years of publication (68% vs. 51 were more complete in the listed runs owned (80% vs. 64%); owned a higher percentage of the total possible critical period (77% vs. 71%); and had a higher percentage of the critical period for those journals which they actually possessed (92% vs. 79%).

Books Held in Sample Topics

Data on the average number of books held by stable and developing institutions for selected topics are presented below.

	Developing (n = 4)	Stable (n = 16)
Standard Topics	261*	245
Recent Topics	288*	268
Strong Topics	392	466
Weak Topics	150	242

The developing institutions hold slightly more books on standard and recent topics than do the stable institutions. The developing institutions have 2.6 times as many books for strong topics as for weak topics; stable institutions have 1.9 times as many books in strong topics.

Availability Gap (AVG) Data

Two of the 4 developing institutions and 5 of the 16 stable institutions did not record acquisition dates; hence the AVG analyses were performed on 2 developing and 11 stable institutions. Since the developing

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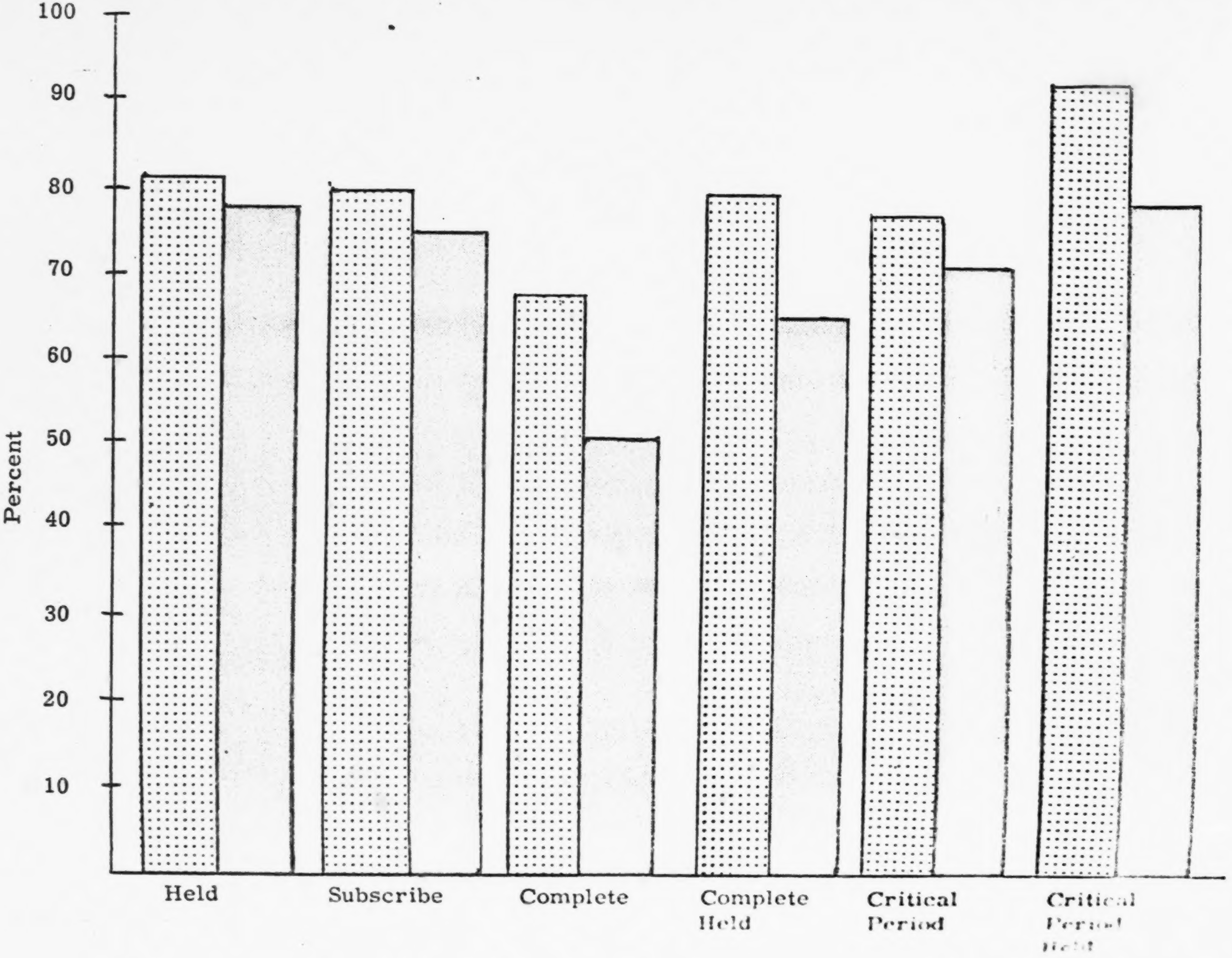
*Due to changes made in the standard and recent topics in the early part of the study, the number of developing institutions contributing to these two averages is reduced to two.


Percent
100
90
80
70
60
50
40
30
20
10
Held
Subscribe
Complete
Complete Held
Critical Period
Critical Period Held

nstitutions are relatively young, it is not possible to determine AVG ver the long period from 1936 to 1967; therefore, the following analyses re for the 6-year period from 1962 to 1967.

	Developing (n = 2)	Stable (n = 11)
AVG: Current Acquisitions ------	1.8 yrs.	1.4 yrs.
AVG: Retrospective Acquisitions -	11.8 yrs.	9.0 yrs.
AVG: Total Acquisitions---------	6.6 yrs.	2.0 yrs.

In terms of current acquisitions, it can be seen that the developing institutions were acquiring books published somewhat less recently than those acquired by the stable institutions (approximately 22 months since publication as compared to 16 months). The average of 11.8 years AVG for the developing institutions reflects the basic situation of a developing library -- i.e., many of the books acquired by the stable institutions on a current acquisition basis must be acquired retrospectively by developing institutions because the library itself was not in existence when these books were published. Further confirmation of the developing state of these younger institutions is provided by the percent division of current to retrospective collecting: the stable institutions made 90% of their total acquisitions on a current basis whereas the developing institutions divided their acquisitions into 52% current and 48% retrospective. The difference between the AVG averages for total acquisitions necessarily reflects the high retrospective AVG shown to exist for the developing institutions.

Summary for Stable versus Developing Institutions

The following conclusions suggest themselves regarding comparisons of the 16 stable versus 4 developing institutions as found in the mple. On those measures for which good performance is not highly dependent upon sheer longevity, the developing institutions compare favorably with their stable counterparts. Thus, performance on the basic book list and holdings on the selected topics was approximately equal for both groups. In regard to journal holdings, however, the lack of longevity acts to penalize the developing institutions. Finally, the relative youth of the developing institutions seems to force them to engage in a heavier amount of retrospective collecting.

ANALYSES BY SELECTION TYPE

Differences in the type of selection process employed were found among institutions, and among the science departments themselves even within the same institution. Analyses by institutional selection type, and then by departmental selection type, follow.

INSTITUTIONAL SELECTION TYPES

At the institutional level, two dimensions of the selection process are useful in categorizing the institutions according to selection types. One is the dimension of selection dominance -- which group, faculty, or library staff does the major portion of title selection (more than 50%). Estimates of selection activity made by the Head Librarians and the library staff members served to classify institutions on this dimension. The second selection dimension is that of library aid -- does the library provide information to the faculty that is useful in making selection decisions. Judgments as to whether a particular institution belonged to the "aided" or "unaided" category were made by comparing faculty and library staff responses to the questions:

(Faculty) "Does the library systematically provide the department with information on materials that are available or information relevant to selecting books?"

(Library) "Do you routinely provide the science faculty with any information on what is available in their fields?"

An institution was categorized in the aided category if both the faculty and the library staff agreed that information was provided; if none was provided, or if a discrepancy existed among the respondents, the institution was placed in the unaided category.

If both selection dimensions are considered simultaneously, then the sample institutions are distributed as shown in the diagram below.

	Faculty Aided	Faculty Unaided	Total
Faculty Dominant	6	7	13
Library Dominant	2	4	6
Total	8	11	

(n = 19)

The total number of institutions employed in these analyses is 19; one was dropped because the selection activity was equally divided.

Decision Making in Faculty-Dominant versus Library-Dominant Institutions

Since the primary decision of concern at this level is the division of title selection responsibility, discussion of budgetary decisions will be minimized. Sixty-seven percent of the 19 head librarians at both selection type institutions expressed satisfaction with the present means for deciding on the library's appropriation. At the acquisition budget decision level, 7 of the 13 (54%) of the faculty-dominant (FD) and 3 of the 6 (50%) library-dominant (LD) head librarians were satisfied with the decision means. The points of dissatisfaction here for the LD group were several. One head librarian cited inadequate information on new programs, and another cited the use of rigid formulas to determine the acquisition amount. The FD group had the same complaints with 6 of the 13 (40%) being distressed about the use of formulas.

A budgetary point more related to the selection issue is whether separate book budgets are established for the various departments. In the 6 LD institutions 60% of the libraries do not create separate book budgets for the departments, whereas in the 13 FD institutions the most prevalent procedure (77%) is to establish separate budgets. Thus, a basic difference attends the two selection types: the majority of faculty-dominant institutions provide separate book budgets for their departments, while the majority of library-dominant institutions do not.

In response to a question on what are the strong features of the selection policy or practices, an interesting divergence of opinion occurs. At the FD institutions, 9 head librarians cited faculty involvement (69%) as the major strong point, while 4 of 6 (67%) head librarians at the LD institutions thought that responsiveness to user needs was the major feature. Both FD and LD respondents mentioned lack of adequate staff (LD -- 33%, FD -- 31%), but 3 of the 6 LD head librarians cited an unevenness in coverage as a major weakness. Only one of the 6 LD institutions is a developing institution, so this weakness cannot be attributed to recency of the institutions involved. This point is examined further in a later section on objective collection description measures.

In terms of satisfaction with the present selection process, the only expression of dissatisfaction among head librarians came from 3 (2 of those at the 13 FD institutions. How satisfied were the faculty at th different institutions? As pointed out earlier, faculty statements on satisfaction are primarily germane to selection activity within their respective departments rather than directly relevant to the division of selection responsibility. However, a faculty member at library-domin institutions could still make selections; therefore, the comparison is made between the faculty members at both types of institutions. It was found that 78% of the faculty at the LD institutions were satisfied with the present selection process; 74% of the faculty at the FD institutions also expressed their satisfaction with the present system. This findin leads to a tentative hypothesis that faculty members may be satisfied if they have the right to select materials. That is, in both the FD and LD case, the faculty members were able to select materials; increasi their share of the selection activity to more than 50% did not create an increase in their expressed satisfaction. The tentative nature of this hypothesis is highlighted by the several factors which contribute to the gross estimate of satisfaction, e.g., how selection is specifically han within the department, whether funds have been sufficient, how much a quisition lag exists, etc.

Basic Book List Data

The mean percentages held of the basic book list are shown bel for the respective types of selection institutions.

	Faculty Aided	Faculty Unaided	Total
Faculty Dominant (n = 13)	69%	51%	59%
Library Dominant (n = 6)	63%	73%	70%
Total	(all aided) 67%	(all unaided) 59%	

The data in the above table may be viewed in several ways. If the four selection types are ranked in terms of the percent of the book list held, then the following listing results:

Selection Type	% of Book List Held
Library Dominant -- Unaided	73
Faculty Dominant -- Aided	69
Library Dominant -- Aided	63
Faculty Dominant -- Unaided	51

According to the analyses, the institutions at which the library staff does more than 50% of the selecting and does not provide selection information to the faculty enjoy a slight lead over the second-ranked selection type, in which the faculty do the major selecting while being aided by the library staff.

Considering only the "dominance" dimension, the institutions which employ the library-dominant mode achieve a higher percent hol of the basic book list (70%) than do the faculty-dominant type instituti (59%).

The question of whether a higher percentage is achieved when the library does or does not provide selection aid to the faculty is ans by temporarily ignoring the dominance-dimension; the result indicates

Aided Selection Type ---------	67%
Unaided Selection Type -------	59%

Basic Journal List Data

An analysis of the journal holdings has been omitted in the d cussion of selection types at the institutional and departmental level. This was done because the information used in establishing the select types (library dominant versus faculty dominant at the institutional le and the Multiple Independent Selectors, Single Selector, and Departmental Vote at the department level) was relevant primarily to books not journals. In some cases, the process of selecting both types of m terials may be the same, but the greater cost and longer commitment attendant to journals often prompts a different selection approach. H an analysis of journal holdings by means of selection types derived f book selection procedures would be inappropriate.

Books Held in Sample Topics

The substitution of book topics data (mean number of books held on selected topics) for the basic book data yields the following information:

Selection Type	Mean Number of Books Held on Selected Topics Strong	 Weak	 Recent	 Standard
aculty Dominant/Faculty Aided (FDFA)	354	252	205	225
ibrary Dominant/Faculty Aided (LDFA)	422	311	516	236
culty Dominant/Faculty Unaided (FDFU)	125	104	86	136
brary Dominant/Faculty Unaided (LDFU)	1140	371	625	540

Interpretation of this table is aided by ranking the four selection types from high to low on each of the topics; such a ranking yields:

	Strong	Weak	Standard	Recent
(most books)	LDFU	LDFU	LDFU	LDFU
	LDFA	LDFA	LDFA	LDFA
	FDFA	FDFA	FDFA	FDFA
(least books)	FDFU	FDFU	FDFU	FDFU

hese results show perfect consistency across topics in that, regardless the type of topic, those institutions at which the library staff does most the selecting have more books. First and second ranks are occupied by rary-dominant institutions; third and fourth ranks are held by institu- ons at which the faculty are dominant and aided and unaided, respectively.

Having the most books on a topic is generally a praiseworthy accomplishment, except where the topic is a weak one (an area cited by the department as one in which teaching activity is either absent or negligible. However, as was seen in earlier sections, a more appropriate appraisal of the strong/weak topics is the relationship they bear to each other rather than their absolute number. That is, one might justify a large number of books in a "weak" area by saying that because it is not taught in the classroom it is all the more necessary that the library contain information on it. However, to possess more books in a weak area than in a strong one is not as justifiable, hence the use of the strong/weak ratio.

When the strong/weak ratios are calculated, the following ranking is found to exist:

Strong/ Weak Ratio	Selection Type
3.0	Library Dominant/Faculty Unaided (LDFU)
1.4	Faculty Dominant/Faculty Aided (FDFA)
1.4	Library Dominant/Faculty Aided (LDFA)
1.2	Faculty Dominant/Faculty Unaided (FDFU)

The top-ranked selection type -- that of library dominant/faculty unaided -- holds more than three times as many books for strong than for weak topics. Ranks two and three are occupied by different selection types than earlier rankings on number of books held on all topics; the faculty dominant/faculty aided type ranks second by a small amount. The most striking difference is, of course, between number one ranked LDFU and the others.

In general, the topics data indicate better performance on this type of measure for those institutions at which the library staff does the major portion of title selection while aiding or not aiding the faculty. Performance of institutions at which the faculty does most of the selecting is generally enhanced by having the library staff aid the faculty with selection information.

Availability Gap (AVG) Data

The following table presents AVG data for the various institutional selection types:

Selection Type	Availability Gap (Years) Current AVG	Retrospective AVG	Total AVG
FDFA (Faculty Dominant/Faculty Aided)	1.3	11.9	4.1
LDFA (Library Dominant/Faculty Aided)	1.0	5.5	1.2
FDFU (Faculty Dominant/Faculty Unaided)	1.7	8.0	2.6
LDFU (Library Dominant/Faculty Unaided)	1.3	9.2	1.9

Again, simplification is achieved by ranking the selection types in terms of performance on the AVG measures; the result is as follows:

Current AVG	Retrospective AVG	Total AVG	
LDFA	LDFA	LDFA	(Smallest AVG)
LDFU	FDFU	LDFU	
FDFA	LDFU	FDFU	
FDFU	FDFA	FDFA	(Largest AVG)

With one exception in retrospective selection, the longest availability gaps are achieved in institutions where the faculty-dominant selection mode is employed.

An additional finding for these data is the percentage of total acquisition activity that is devoted to retrospective collecting. On a percentage basis, the library dominant selection modes (aided and unaided) devoted 2% and 8%, respectively, toward retrospective collecting, while the faculty dominant selection modes devoted higher percentages of 26% and 14%, respectively.* That is, there was less retrospective collecting done at library dominant institutions than at faculty dominant institutions in the science areas sampled. Several interpretations suggest themselves but no data are available for their confirmation or denial.

DEPARTMENT SELECTION TYPES

Earlier in this report, three types of selection procedures were cited as occurring within the science departments sampled. These were:

> Multiple Independent Selectors (MIS): all faculty free to select; no one member selects more than 50% of the department's library selections.
>
> Single Selector (SS): situation in which a single department member selects more than 50% of the department's library selections.
>
> Departmental Vote (DV): all department members make selections which are then voted on by the department as a whole at periodic intervals. No single member is dominant.

Since the faculty are the dominant selectors at 70% of the 20 institutions surveyed, it is of interest to examine their three types of selection procedures in terms of the available data to see if any one type is allied with a particular result.

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*See earlier note on possible underestimation of these percentages on page 85.

Decision Making Comparisons Among Three Departmental Selection Types

The Multiple Independent Selectors (MIS) category was by far the most prevalent selection type used by the departments in our study. Next in frequency of occurrence was the Single Selector (SS) type, while the Departmental Vote (DV) category was the least-used procedure.

General satisfaction with their present selection process was approximately equal among interviewed members of the MIS and SS type departments (75% and 76%, respectively). The DV departments had a somewhat lower percentage (67%) of satisfied members.

In regard to strong points of their procedures, a higher percentage (38%) of the DV group cited good coverage than did members of the MIS (20%) or the SS (29%) group. Efficiency, a point cited by the MIS (9%) and SS (15%) groups, was not mentioned by the DV members. Typically, the voting procedure entails more effort on the part of each member than do the other methods.

The three groups did not differ drastically in terms of their evaluation of weaknesses in their selection processes. Inadequate coverage was cited by 26% of the MIS, 18% of the SS, and 23% of the DV group. The remaining weaknesses received few comments.

In general, there are no large differences among the three groups in terms of their verbal responses to the questions asked. It is left to the more quantitative data to determine if output differences exist.

Basic Book List Data

The three selection types held the following percentages of th basic book list:

Selection Type	% of Book List Held
Multiple Independent Selectors (MIS) (n = 43 departments)	55
Single Selector (SS) (n = 17 departments)	69
Departmental Vote (DV) (n = 3 departments)	58

The single selector type appears to have demonstrated better formance on this measure than did his counterparts. However, furt evaluation must await discussion of the other findings.

Books Held in Sample Topics

The table below shows the average number of books held for selected topics in terms of the selection type employed at the depar level.

		Topics		
	Selection Type	Weak	Strong	Standard
SS	Single Selector (n = 17 departments)	74	213	113
MIS	Multiple Independent Selectors (n = 43 departments)	68	111	90
DV	Departmental Vote (n = 3 departments)	41	82	41

It is readily seen that the single selector type achieved top ranking across all topics and on the strong/weak ratio, followed in order by the multiple independent selectors and departmental vote. On the strong/weak ratios, the order was SS (2.9), DV (2.0), and MIS (1.6). These results, coupled with the previous basic book data, suggest a pattern of single selector advantage with regard to the objective measures employed.

Availability Gap (AVG) Data

The mean AVG's for the three selection types are presented in the following table:

	Selection Type	Availability Gap (Years) Current AVG	 Retrospective AVG	 Total AVG
SS	Single Selector (n = 8 departments)	1.4	9.9	2.8
MIS	Multiple Independent Selectors (n = 26 departments)	1.4	10.7	2.9
DV	Departmental Vote (n = 3 departments)	1.4	10.5	2.9

Although the single selector type was again ranked one on all measures, differences among the three types appear negligible.

ANALYSES BY SPECIFIC SCIENCE

Data are available for the measures employed thus far on each of the three sciences. During the course of the project, the interviewers were occasionally presented with statements as to the uniqueness of the literature situation in each of the sciences: e. g., "Physics has less need for books than chemistry or biology"; "Chemists have achieved greater bibliographic control over their literature"; "Biology has more subareas and, hence, more literature to survey and control than either of the other sciences." Our data are not directed toward confirming or denying these points; however, such statements do point out that unique features may exist for each of the sciences. Toward this end, an examination of the data may prove useful.

Decision Making Comparisons Among the Sciences

Biology was the science most receptive to foreign language materials, indicated by the fact that 44% of the biologists said they did order such materials, as opposed to 29% of the physicists and 26% of the chemists.

The three types of scientists are in agreement as for whom the books are selected. For self-use, the biology, physics, and chemistry faculties cited percentages of 45%, 49%, and 51%, respectively. When selecting for students, the graduate students are more dominant in the minds of all the science faculty selectors than are the undergraduates.

Slightly more of the physics faculty members were satisfied with the selection processes (81%) than were those of chemistry (75%) or of biology (71%).

In general, faculty members of all three sciences are grossly unfamiliar with the selection procedures of fellow scientists on the same campus. Thus, if a good procedure or technique did exist, it is unlikely that it would be widely known or used. The physicists were most familiar with procedures of other departments (12%) as compared to 3% of the biologists and 2% of the chemists.

The distribution of two of the three types of departmental selectors (MIS and SS) in terms of the three sciences does not show any indication that a particular selector type is uniquely associated with any one science. The one exception to this statement is the DV type which consisted of three biology departments.

Finally, the gross satisfaction of each of the sciences with their libraries shows some slight differences; in terms of expressing dissatisfaction, the following percentages were reported: physics, 6%; biology, 12%, and chemistry, 15%.

Basic Book List Data

It will be recalled that there were actually three separate basic book lists,[*] one for each of the sciences. Chemistry, viewed across all institutions, held 59% of its basic list; physics held 62%; and biology led the trio with 68% of the basic list being held. Figure 9 shows the distribution of institutions within each science on the basic book list measures.

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[*] While the three book lists contain different titles, the compari- made among the three sciences appears justified due to the common method used by the AAAS in establishing the larger list from which our lists were selected.

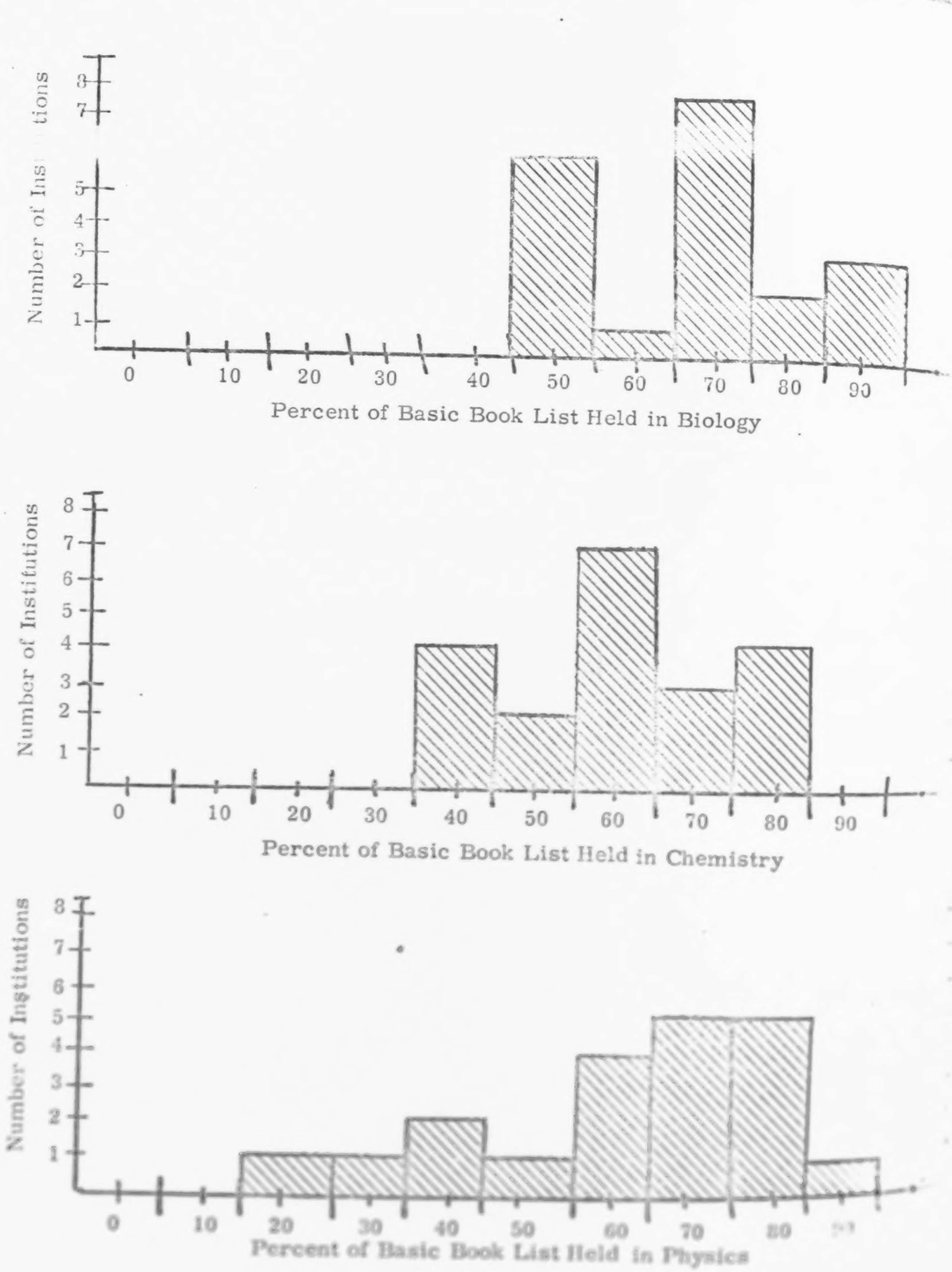


Figure 9: Distribution of Institutions for Each Science Book List

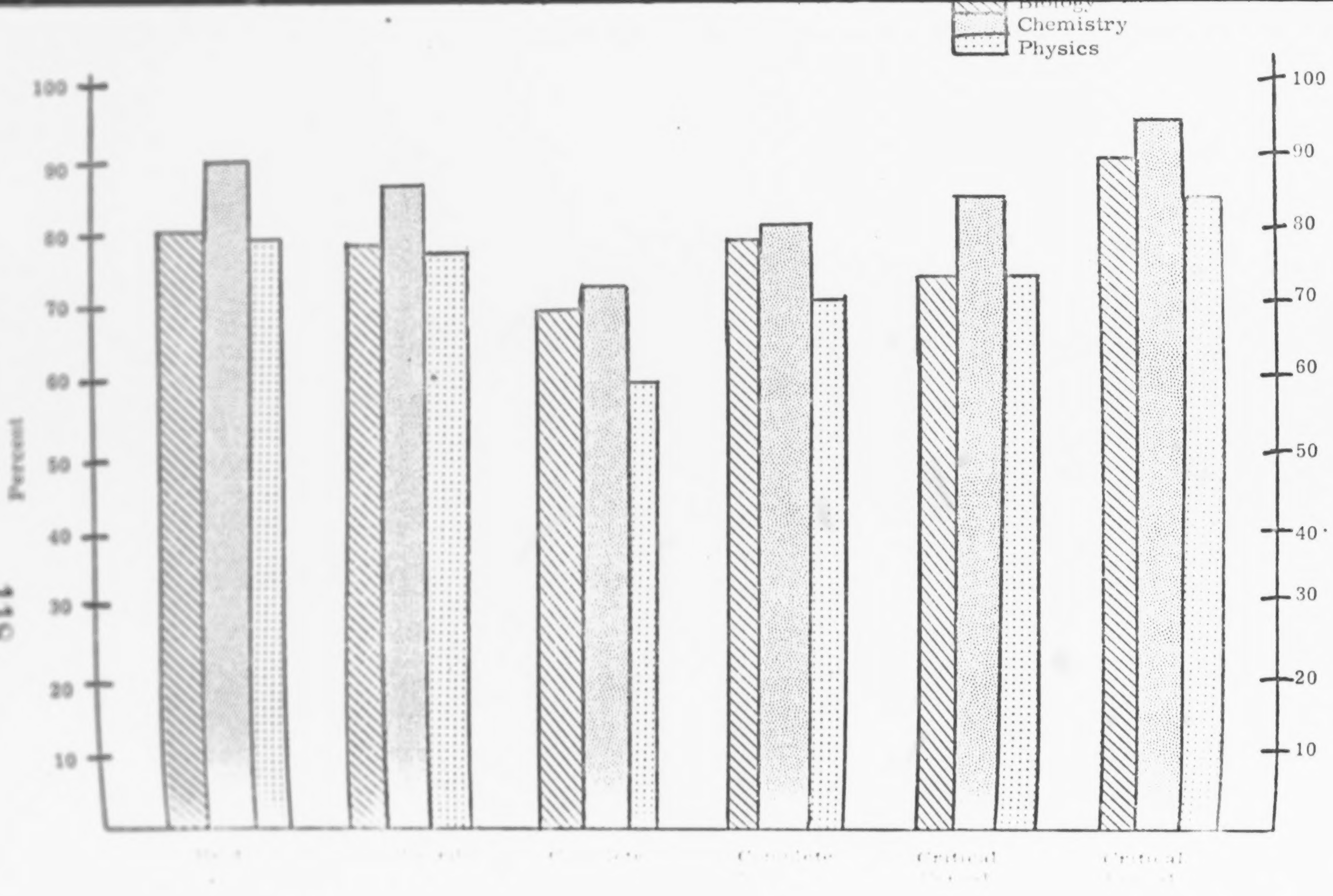
Basic Journal List Data

As with the basic book lists, there was a separate list of recom-
ed journals for each of the sciences. Figure 10 presents a compari-
mong the three sciences for each of seven journal measures. Inspec-
of this figure shows that the three sciences maintain the same ranking
ss six of the seven measures; with one exception, chemistry leads
biology and physics in a consistent fashion. Biology holds down the
nd-rank position throughout with one exception wherein it occupies
top rank. Physics is in third position on all measures; however, this
be due to the fact that the list of recommended journals for physics
considerably longer (33 journals) than either biology (22 journals) or
mistry (16 journals).

Books Held in Sample Topics

Data on the average number of books held on selected topics for
h of the sciences across all institutions are presented below.

Science	Weak	Strong	Standard	Recent
Physics	43	198	229	126
Biology	96	180	62	100
Chemistry	82	68	9	52


Chemistry
Physics
Percent
100
90
80
70
60
50
40
30
20
10
Complete
Complete
Critical
Critical

When the sciences are ranked across the various topics, the following results appear:

	Weak	Strong	Standard	Recent
(Most books)	Biology	Physics	Physics	Physics
	Chemistry	Biology	Biology	Biology
(Least books)	Physics	Chemistry	Chemistry	Chemistry

Physics, it can be seen, occupies the top-ranked position on 3 out of 4 of the topics; the exception is that it holds the least number of books on topics cited as being weak areas in regard to teaching. Reference to the strong/weak ratio shows that physics has 4.6 times as many books on strong topics than weak topics, whereas biology holds a ratio of 1.9. The strong/weak ratio for chemistry indicates an unusual reversal in that there are 1.2 times as many books held on weak topics than on topics cited as being strong. Physics may have less need for books as was reported -- but based on the topics data it has more books than chemistry or biology.

Availability Gap (AVG) Data

The following table presents AVG data for the three sciences:

Science	Availability Gap (Years) Current AVG	Retrospective AVG	Total AVG
Chemistry	1.3	11.2	2.7
Physics	1.6	10.2	2.6
Biology	1.5	10.3	3.4

When ranked, a more simplified presentation is achieved for the three sciences:

	Current AVG	Retrospective AVG	Total AVG
(Smallest AVG)	Chemistry	Physics	Physics
	Biology	Biology	Chemistry
(Largest AVG)	Physics	Chemistry	Biology

The results of this ranking present a mixed picture: chemistry has a minor edge in making available current acquisitions, while physics has a somewhat larger lead in regard to making retrospective materials available for use. Regarding the percentage of acquisition activity devoted to retrospective collecting, physics does the least (11%) with chemistry (14%) and biology (21%) following in that order.

Summary Regarding the Sciences

In general the three sciences, as sampled in this study, present an inconsistent picture when viewed across the measures presented to date. Each of the three sciences takes a turn at the top-rank of one of the first three measures. Of the basic book list, biology holds the highest percentage; in journal holdings, chemistry is dominant across all six measures; using selected topics, physics leads the others in number of books held on three out of four kinds of topics. Chemistry and physics share first-rank in current AVG and retrospective AVG, respectively. The data indicate differences among the three sciences, but by themselves are inadequate to support an explanation.

RELATIONSHIPS AMONG SELECTED VARIABLES

Certain of the data present themselves in a quantitative for suitable for correlational analyses. Some of the possible correla have been selected and are presented below.

From the descriptive characteristics information obtained libraries, the number of students and the total number of volumes library were abstracted and a correlation run. Several of the sta stitutions in our sample used a formula (e. g., 40 volumes added for new FTE) to determine, among other things, the number of new vo to be added to the collection during the fiscal year. Such a procedu formalizes a general rule of thumb which speaks of the relationship students to volumes. The actual correlation obtained between these ables was .67 (rank-order correlation), which is moderately high a indicates the the volumes-to-student principle generally holds in our

The same characteristics data provided information on the s of the library staff (professional and non-professional combined) in a tion to the number of volumes in each library. The obtained rank-or correlation between these two variables was .82, which is high. Th findings indicate that a close relationship exists between the amount material and users.

Finally, in regard to the objective collection description data each institution was ranked in terms of its percentages held of the ba book lists and the basic journal lists. A rank-order correlation was tained of .52, which indicates a moderate relationship between the t

SUMMARY: MODEL AND CONCLUSIONS

SELECTION MODEL

> It is a commonplace observation that the world we live in is extremely complex. We seek to unravel the simplest thread only to find that it binds together an enormously complex array of interdependent events. One of the ways commonly used to deal with this problem of complexity is through the construction of models. Models are simplified representations of some subject of inquiry. They help scientists and philosophers alike to visualize and determine how changes in one aspect of the model would influence other aspects or how such changes would influence the whole.[*]

In this section, two models are provided in order to present a simplified but comprehensive view of the major descriptive findings. The "frequency description model" covers the major types of the selection process, while the "output description models" cover the major objective collection data in relation to the various selection process types.

Frequency Description Model

This model, like the other to follow, shows the three main dimension used in the study, how they are related, and the frequency of occurrence of the various combinations. The three dimensions are:

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[*] Davis, Robert H. "The International Influence Process: How Relevant is the Contribution of Psychologists?" American Psychologist, XXI (Mar. 1966), 236-243.

- Institutional Type
- Institutional Selection Type
- Departmental Selection Type

The total sample is the starting point and is shown as the top in the pictorial representation of the model (Figure 11). The sample* then divided into three institutional types:

- State, Large, Stable (SLS)
- Private, Small, Stable (PSS)
- Developing Institutions (DI)

This division is shown on the second row of the model. The centage of the sample falling into each type is indicated within the priate box (e.g., 39% of our sample were SLS institutions). Next, institutional type may be subdivided into two institutional selection

- Faculty Dominant (FD)
- Library Dominant (LD)

The resulting subunits of our sample are shown on the third (from the top), again with the frequency of occurence given in terms the percentage of the next higher unit falling into each institutional tion type. Thus on the far left we note that 43% of the SLS institut faculty dominant and 57% were library dominant. An unusual shown at the right of this row -- one school was neither faculty nor dominant, i.e., selection activity was evenly divided among both pants.

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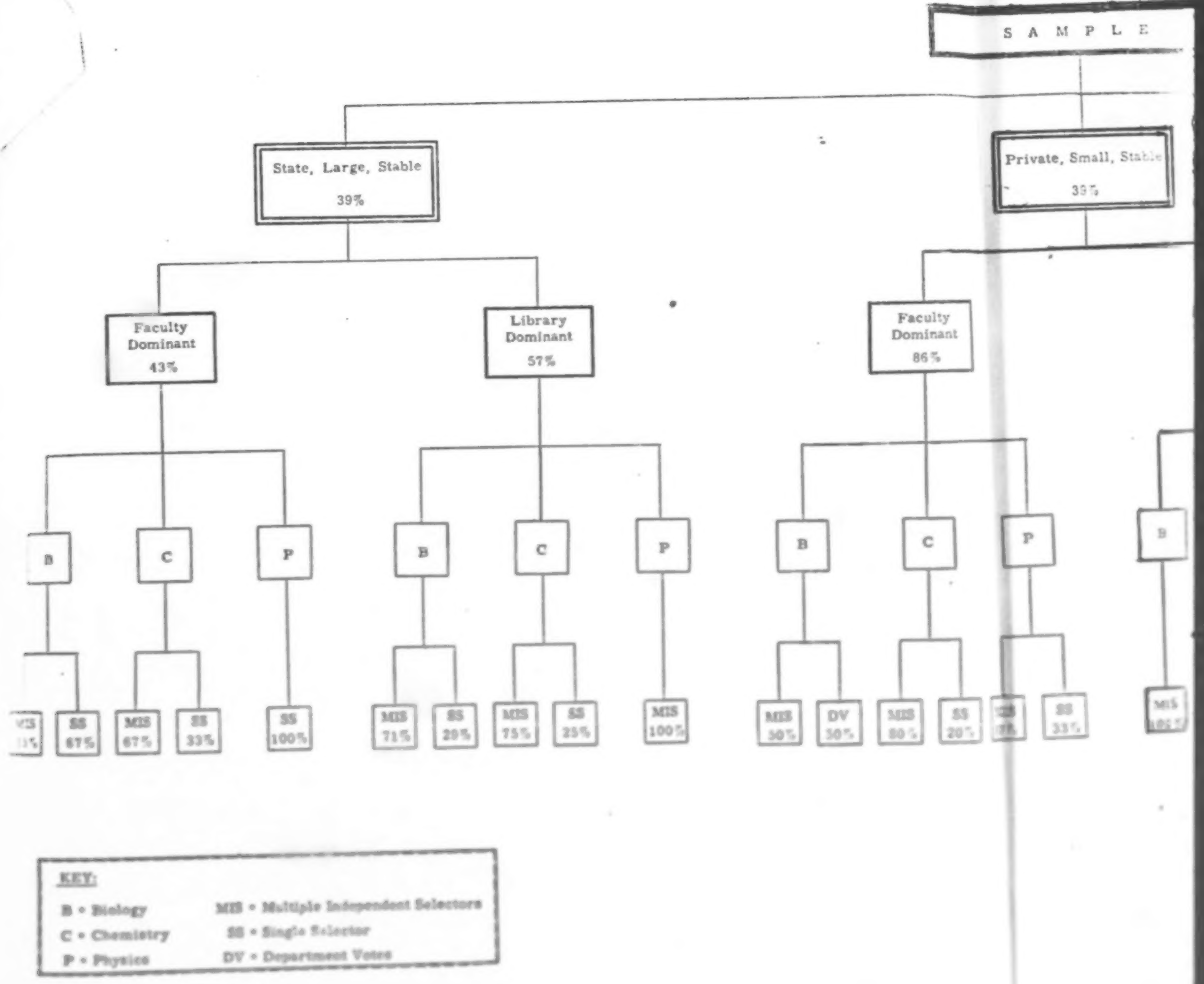
[*] As noted earlier on page 75, 18 institutions were consider the institutional type analysis.

[**] These types were introduced on page 95.


SAMPLE
State, Large, Stable
39%
Faculty Dominant
43%
Library Dominant
57%
Private, Small, Stable
39%
Faculty Dominant
86%
B
C
P
B
C
P
B
C
P
B
IS
3%
SS
67%
MIS
67%
SS
33%
SS
100%
MIS
71%
SS
29%
MIS
75%
SS
25%
MIS
100%
MIS
50%
DV
50%
MIS
80%
SS
20%
SS
33%
MIS
KEY:
B = Biology
C = Chemistry
P = Physics
MIS = Multiple Independent Selectors
SS = Single Selector
DV = Department Votes

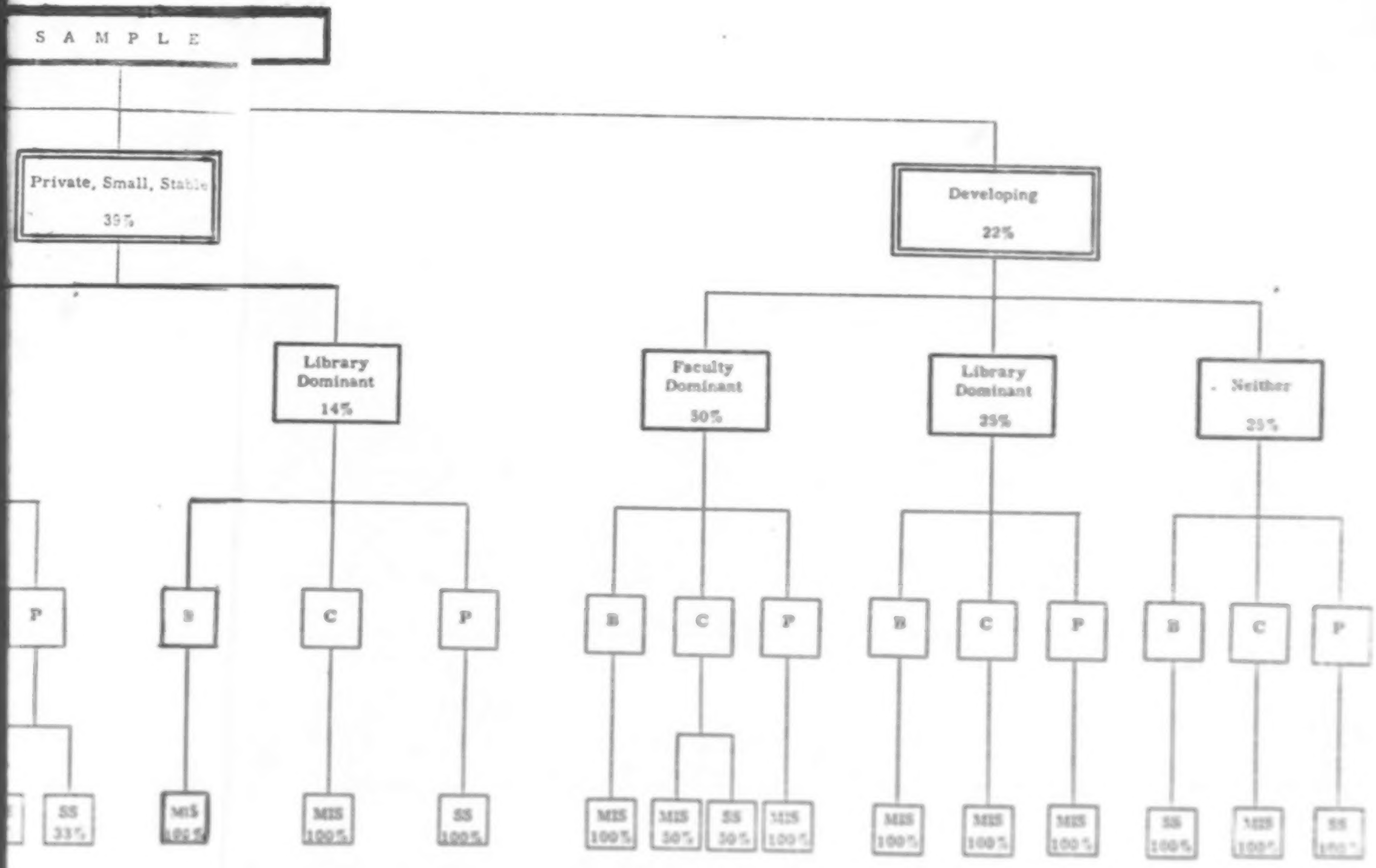

SAMPLE
Private, Small, Stable
39%
Developing
22%
Library Dominant
14%
Faculty Dominant
50%
Library Dominant
25%
Neither
25%
P
B
C
P
B
C
P
B
C
P
B
C
P
SS
33%
MIS
100%
MIS
100%
SS
100%
MIS
100%
MIS
50%
SS
50%
MIS
100%
MIS
100%
MIS
100%
MIS
100%
SS
100%
MIS
100%
SS
100%

Figure 11. Frequency Description Model

The next row divides all institutional selection types into the three departments studied -- biology, chemistry and physics. The fifth row shows the division of the departments into departmental selection types* :

- Multiple Independent Selectors (MIS)
- Single Selector (SS)
- Departmental Vote (DV)

All potential variations do not occur at this level. For example, looking at the extreme left on row 5, it can be seen that no Biology Departments in faculty dominant (FD), state-large-stable (SLS) institutions in our sample used the departmental vote (DV) procedure.

Figure 11 thus provides a scheme for viewing (1) the selection process in its institutional environment and (2) the data describing the relative occurrence of the various types in our sample; other data will replace the selection data in the subsequent models.

Output Description Models

Figures 12 and 13 present objective collection data within the descriptive framework used for the frequency descriptive model above. The only difference is in the numbers entered in the boxes or cells and in what they represent. In these two output descriptive models, the numbers represent the "scores" for institutional or departmental types on two objective collection description measures:

- Percent of basic book lists held
- Mean number of books held in selected topics

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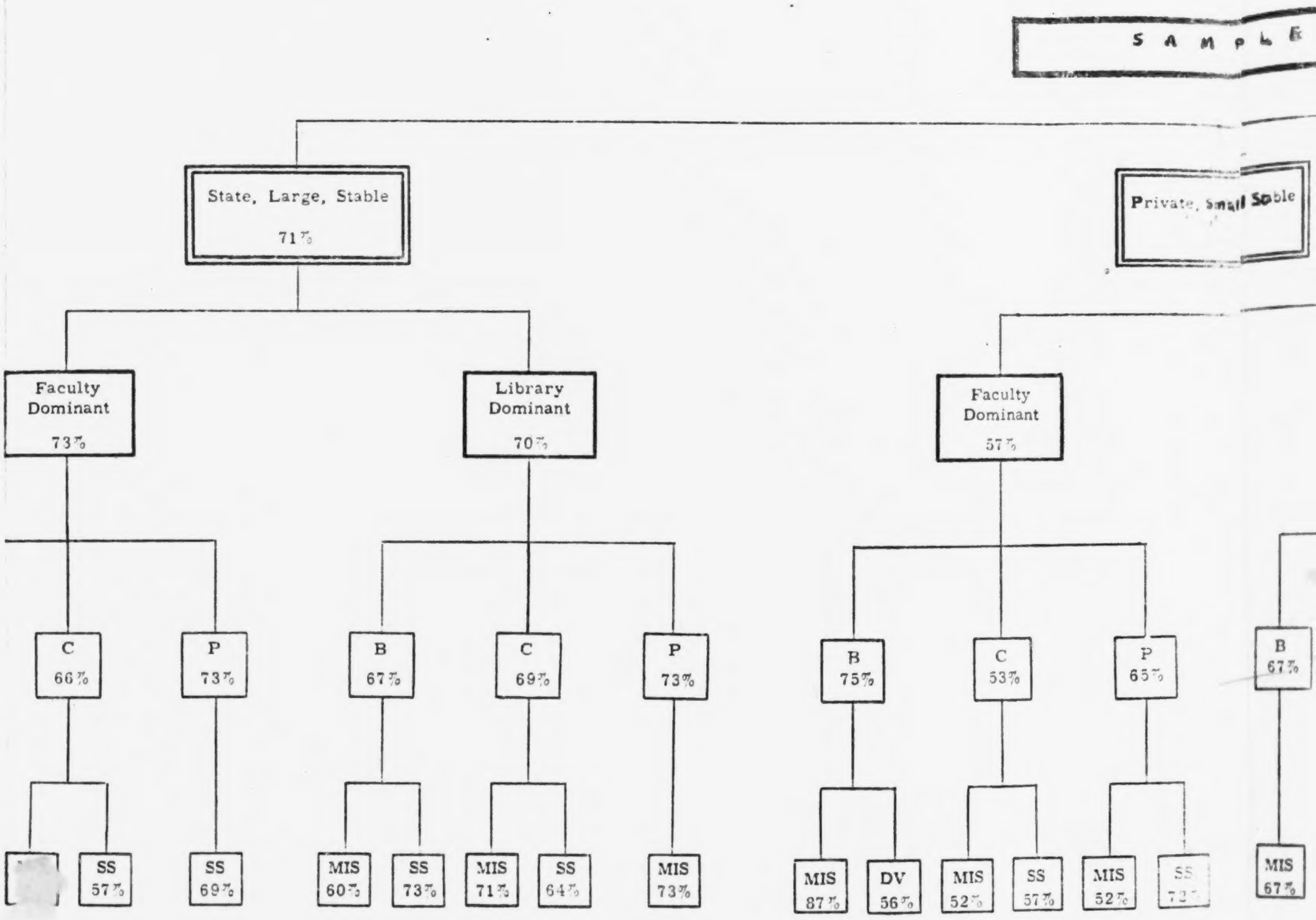
* These types are defined on page 56.


SAMPLE
State, Large, Stable 71%
Private, Small Stable
Faculty Dominant 73%
Library Dominant 70%
Faculty Dominant 57%
C 66%
P 73%
B 67%
C 69%
P 73%
B 75%
C 53%
P 65%
B 67%
SS 57%
SS 69%
MIS 60%
SS 73%
MIS 71%
SS 64%
MIS 73%
MIS 87%
DV 56%
MIS 52%
SS 57%
MIS 52%
SS
MIS 67%

KEY

B = Biology
C = Chemistry
P = Physics

MIS = Multiple Independent Selectors
SS = Single Selector
DV = Department Votes

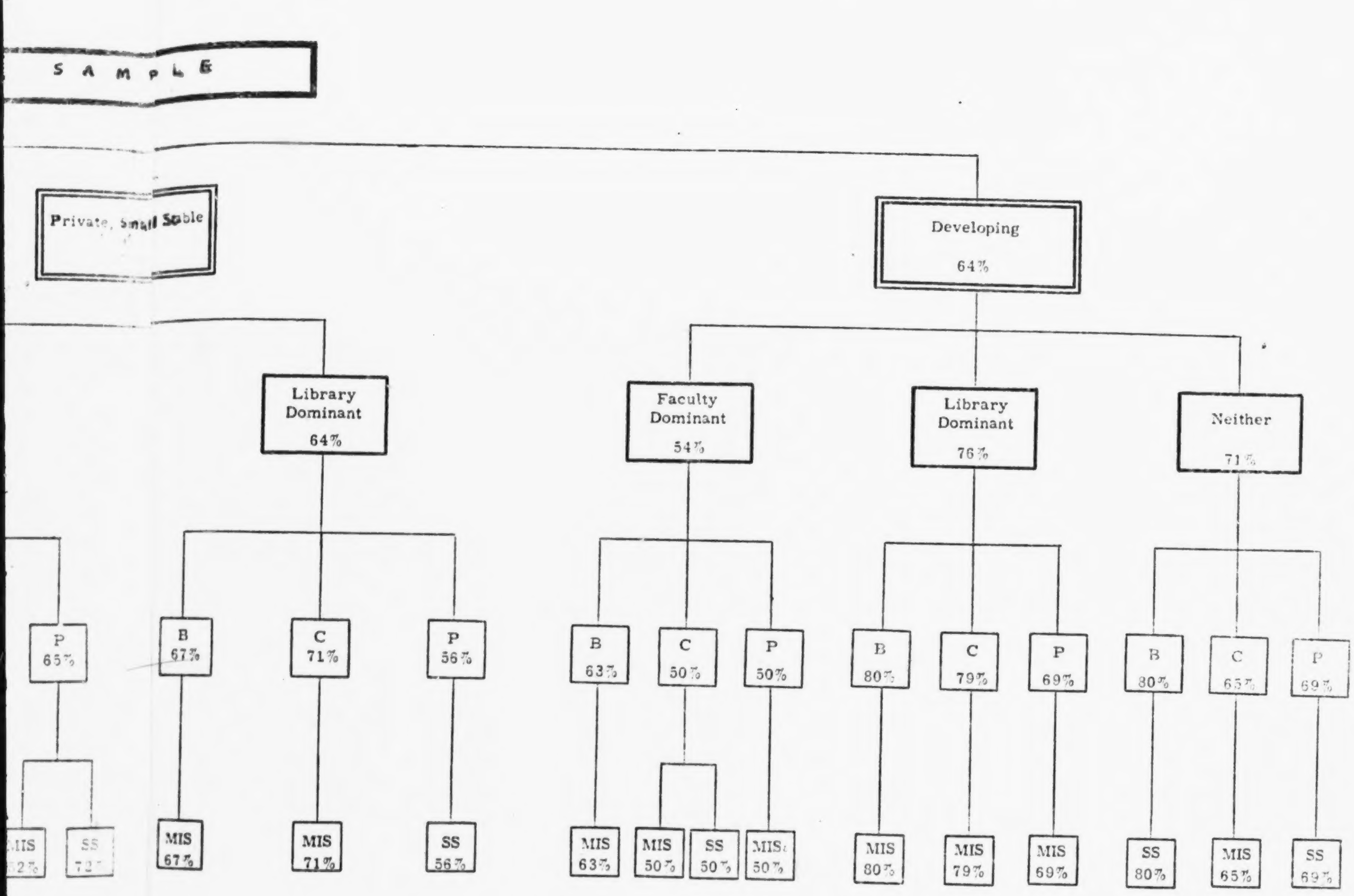
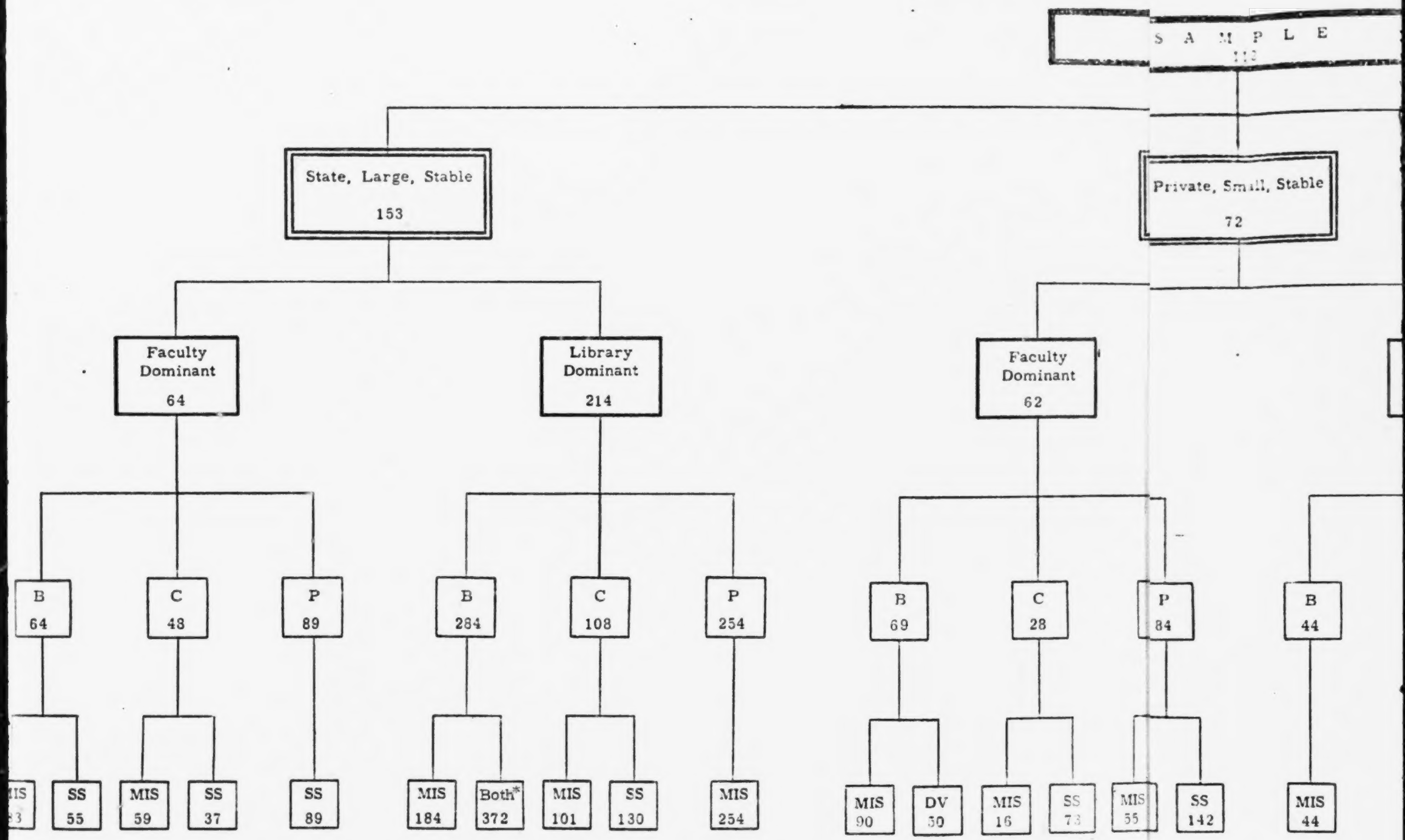

SAMPLE
Private, Small Stable
Developing
64%
Library Dominant
64%
Faculty Dominant
54%
Library Dominant
76%
Neither
71%
P
65%
B
67%
C
71%
P
56%
B
63%
C
50%
P
50%
B
80%
C
79%
P
69%
B
80%
C
65%
P
69%
MIS
SS
MIS
67%
MIS
71%
SS
56%
MIS
63%
MIS
50%
SS
50%
MIS
50%
MIS
80%
MIS
79%
MIS
69%
SS
80%
MIS
65%
SS
69%

Figure 12. Output Description Model
Percent Basic Book Lists Held



S A M P L E
State, Large, Stable
153
Private, Small, Stable
72
Faculty Dominant
64
Library Dominant
214
Faculty Dominant
62
B
64
C
48
P
89
B
284
C
108
P
254
B
69
C
28
P
84
B
44
SS
55
MIS
59
SS
37
SS
89
MIS
184
Both*
372
MIS
101
SS
130
MIS
254
MIS
90
DV
50
MIS
16
SS
MIS
55
SS
142
MIS
44

*At institutions where biology was actually organized as 2 to 5 departments, i.e., micro-biology, zoology, botany, etc., it was possible to find both MIS and SS types within biology at a given institution

KEY:

B = Biology
C = Chemistry
P = Physics
MIS = Multiple Independent Selectors
SS = Single Selector
DV = Department Votes

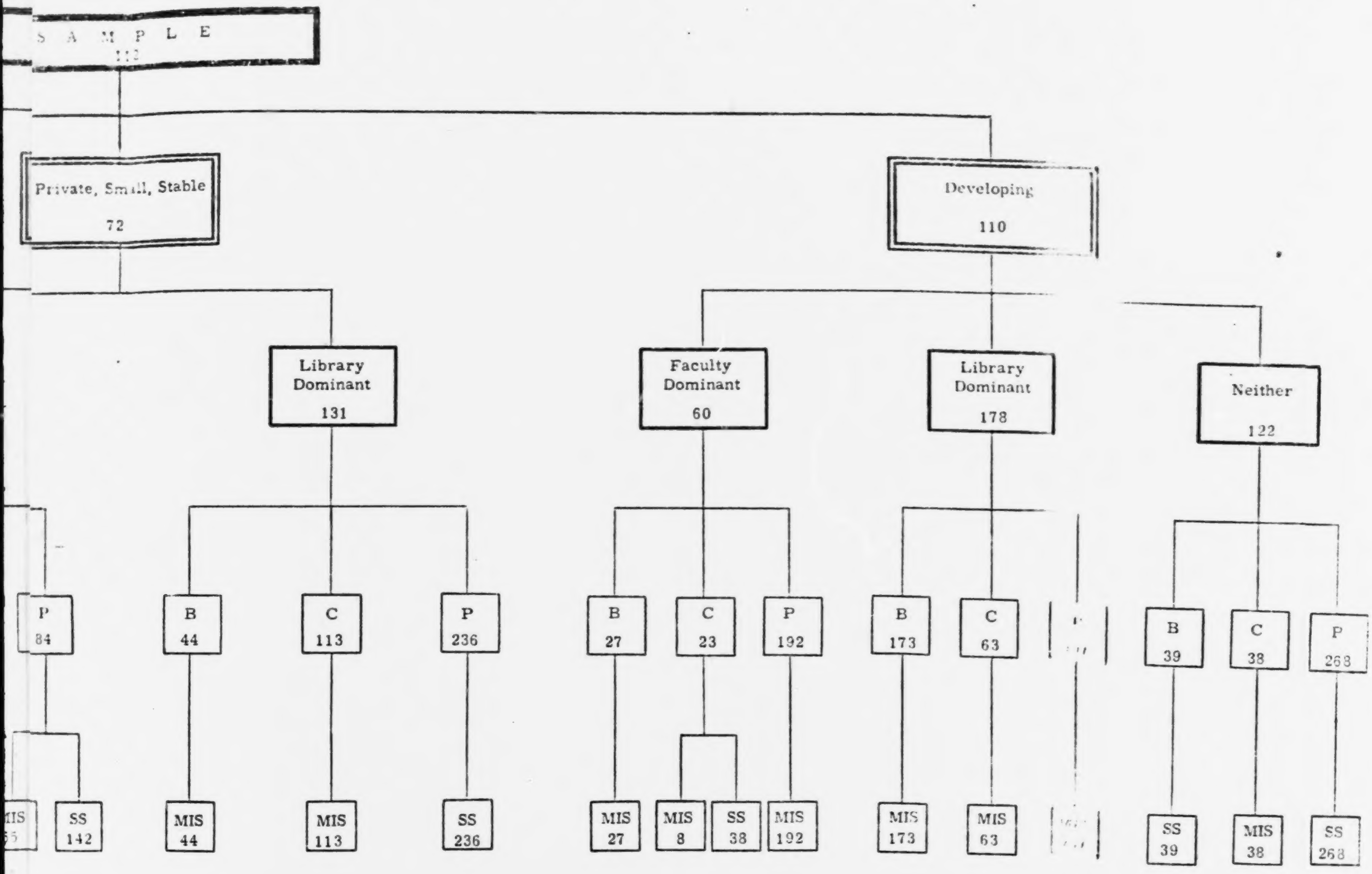

SAMPLE
Private, Small, Stable
72
Developing
110
Library Dominant
131
Faculty Dominant
60
Library Dominant
178
Neither
122
P
84
B
44
C
113
P
236
B
27
C
23
P
192
B
173
C
63
B
39
C
38
P
268
SS
142
MIS
44
MIS
113
SS
236
MIS
27
MIS
8
SS
38
MIS
192
MIS
173
MIS
63
SS
39
MIS
38
SS
268

Figure 13. Output Description Model

Mean Number of Books Held in Selected Topics

Looking at the Output Description Model - Basic Books, we see that an average of 64% of the basic books[*] was held when considering all institutions in the sample. Going down the center line, 58% of the basic books was the mean score for PSS institutions; 57% was the mean score for FD - PSS institutions, and at those institutions Biology Departments had a mean score of 69%, 64% if they had a MIS and 58% if they had a DV selection system.

In the same manner one can trace the various subdivisions and determine the scores or values found in this study for the measures noted above.

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[*] See page 70.

126-127

SUMMARY CONCLUSIONS

This section does not present any new evidence. It is concerned with selecting and/or summarizing the more pertinent and interesting findings of this study. The reader is once again cautioned regarding the limitations involved in generalizing from these conclusions to the remaining 2,000 or so institutions in the country. The non-random nature of the small (n = 20) sample and the restricted definition of "science" as limited to chemistry, physics and biology departments must all be borne in mind by the reader. A fuller discussion of these points are found in the Introduction.

(1) The sample institutions were readily described in terms of three institutional types (SLS, PSS, DI), four selection types (LDFA, LDFU, FDFA, FDFU), and three categories of departmental selection types (MIS, SS, DV).

(2) There was a relatively limited number of basic types of selection procedures found across the range of institutions sampled.

(3) Selection policy statements generally do not exist; where present, they provide little guidance to selection decisions.

(4) Although automatic acquisition plans are becoming more common, they do not eliminate decision making; rather, they act to change the nature of the selection tool from related information to the material itself.

(5) Most respondents feel that the library is adequately supported by the institution -- but nevertheless they complain about funds.

(6) The head librarians feel that the sciences present the library with unique budgeting problems.

(7) No important differences were found among the three sciences sampled (chemistry, physics, and biology) in respect to the manner or results of their selection procedures.

(8) Little communication regarding selection procedures exists among the three science departments.

(9) Lack of comprehensiveness, or unevenness, is the main complaint lodged against the collection; more money and staff are the major suggested remedies.

(10) Suggestions most commonly cited as corrective measures for the selection problem included: more faculty involvement; use of science subject-specialist; increased cooperation and information flow between the faculty and the library; and the use of better selection tools.

(11) Library acquisition funds are usually subdivided into departmental allotments with the departments retaining further control over their usage.

(12) While the libraries prepare the formal, proposed budget, the administration is more influenced by the faculty on questions of collection adequacy as it influences the budget.

(13) While the head librarians have more control than anyone else over questions of acquisition and departmental allotments, the faculty have major influence over the library budget through their inputs to the administration.

(14) The faculty want funds from the administration rather than "support."

(15) Administrative personnel and the faculty believe that the faculty should do the selecting; the librarians see joint responsibility.

(16) The faculty were the major selectors in the institutions sampled.

(17) Not all of the faculty are involved in selection; the head librarians feel this situation to be a problem.

(18) The faculty see the library as a repository for teaching and research materials; they view their selection efforts as supporting teaching and research.

(19) Complaining faculty members appear to be the only continuing evaluative feedback mechanism in regard to library operations.

(20) Most of the librarians and the faculty are satisfied with their present selection procedures; most are unfamiliar with alternate procedures.

(21) More head librarians at PSS institutions were satisfied with the way in which the library's appropriation was determined than their SLS counterparts.

(22) SLS institutions hold more books in the selected topics sampled than did the PSS institutions.

(23) SLS institutions hold more of the basic book and journal lists than did PSS institutions.

(24) The SLS institutions appear to retrospectively select further back in time than do the PSS institutions.

(25) Approximately 10% of selection activity appears to be retrospective; in this regard, SLS institutions did more retrospective collecting than PSS institutions.

(26) Administrators and faculty/library chairmen at developing institutions were more dissatisfied with the support and attention given to the library than were their counterparts at stable institutions; their complaints centered on the size of the collection and inadequate library staffing.

(27) Satisfaction with present selection procedures was highest among the head librarians and faculty at stable institutions.

(28) The developing institutions compared favorably with the stable institutions on those collection measures which did not require longevity for good results, e. g., completeness of journal holdings.

(29) Developing institutions do more retrospective selecting and go back further in these efforts than do stable institutions.

(30) Lack of a clear selection policy was a major problem noted by head librarians at developing institutions.

(31) The majority of library dominant institutions do not create separate book budgets for their departments; the majority of faculty dominant institutions do.

(32) Satisfaction with the selection process is higher among head librarians at library dominant institutions than at faculty dominant institutions. The faculty are equally satisfied at both types of institutions.

(33) Comparison of library dominant and faculty dominant institutions on objective collection measures indicates generally better performance by the library dominant institutions.

(34) Regarding departmental selection sypes, the single selector demonstrated better performance on the objective measures than either Multiple Independent Selectors or Departmental Vote types.

PART II

GUIDELINES FOR THE SELECTION PROCESS: INTRODUCTION

This part of the report presents guidelines or recommendations regarding the selection process for science library materials. The basic source for these guidelines is the research reported in Part I.

Concepts and approaches from management and systems analysis have been used to synthesize and extrapolate the study findings to the point of becoming general guides.

The guidelines are, of course, at several levels of generality, the level being determined by the nature of the specific topics. In terms of the intended audience, some of the guidelines are relevant to head librarians, some to library staff members, and others to faculty members. While certain of the guidelines bear a relation to each other, most are capable of being extracted and applied in isolation should the reader choose to do so.

The guidelines are not purported to be a set of unique recommendations, each of which is making its debut on the selection scene. A number of them have been supported before, but have failed to be adequately applied; some are extensions of traditional selection ideas; some are new only in their application to this particular problem; and finally, some are old and well-known but valid enough to be repeated.

The guidelines are presented in four parts, dealing with (a) policy and objectives, (b) roles and responsibilities, (c) techniques, methods, and procedures, and (d) communication and feedback.

Appendix A presents the forms and instructions which will aid the librarian in implementing certain of these guidelines.

GUIDELINES

Policy and Objectives

Guideline 1

> The librarian should identify and articulate those current policies, objectives, and environmental conditions which can serve as a basis for indicating the particular set of selection procedures, principles, and decisions appropriate to the particular institution. This fundamental information should include: (a) the service objectives of the institution and library, (b) environmental characteristics that can influence the nature of the collection or selection actions, (c) collection specifications, and (d) current selection needs.

This guide does not mean that the librarian should develop a selection policy. It means that he must determine relevant institutional policies and objectives which do in fact exist (even if unwritten) and the environment in which they exist, and then use them to deduce meaningful operational statements of the nature of the collection and current selection objectives.

The basic items in this logical development are as follows:

(a) Service Policy: The user groups which the institution and library are supposed to be serving, the relative priorities of the user activities and the nature of the service to be rendered by the institution and the collection.

(b) Environmental Characteristics: Any aspects of the user population or the institution or external environment that could or should influence the nature of the collection or selection activities (e.g., financial characteristics of the users, availability of other sources of library materials).

(c) Collection Specifications: Subject areas of concern (e.g., polymer chemistry), the nature of the materials desired in each, and the quantity or degree of coverage -- all with respect to the ultimate collection objective.

(d) Current Selection Needs: The difference between collection specifications and the present collection.

This guideline has something in common with previous pleas to librarians to develop selection policies; the underlying logic is the same. However, past recommendations apparently have not been implemented successfully. The survey of 20 libraries showed that 85% did not have a written selection policy and that 1 of the 3 libraries having a policy found it of little use in selection efforts. The reasons cited for lack of policy typically include a lack of time in which to develop one, lack of perceived need, a lack of interest, and a lack of expected utility. A complicating factor which contributes to this situation is the ambiguity attendant to the term "policy." To some it signifies a lofty statement of noble goals; to others, it implies a written set of ordering procedures; to most, it is a document which offers little guidance to real-world actions.

Past failures and existing difficulties do not negate the overwhelming need for a firm foundation of policy -- objectives upon which to build selection practices and decisions. It does indicate that just what information is needed must be carefully spelled out, the steps to secure it must be delineated, and how it may be used must be made explicit.

The above guideline can only indicate the general objective. Appendix A presents the detail and assistance which will hopefully lead to more successful implementation.

Roles and Responsibilities

Guideline 2

Certain requirements must be met by selection decision makers regardless of who they are. These requirements include:

(1) A working understanding of a basic vocabulary within the field or areas of interest.

(2) Knowledge of which areas comprise the desired collection and the relative importance of each to teaching and research activities.

(3) Quantitative knowledge of the past and present dimensions of the literature in question.

(4) Awareness of and access to an adequate cross-section of selection tools.

(5) Sufficient time in which to perform selection activities so as to avoid the error of undue concentration of total efforts on current imprints.

(6) Contact with the users of the material selected so that feedback may be obtained on the adequacy and appropriateness of the selections.

Guideline 3

There should be at least one professional staff member within the library who has specific responsibility for overall aspects of collection development.

At present, selection responsibility is generally divided between the faculty and the library staff, with further fractioning of responsibility taking place among the latter group. Whereas title selection responsibility may be divided in this manner, responsibility for the overall development of the collection should reside with a professional librarian whose sole concern is ensuring that the collection develops in accordance with desired and specified objectives. Nominally, this responsibility rests with the head librarian or the chief of acquisitions; in practice, they are too often occupied with a multitude of functions to devote full time to it.

Guideline 4

> The library should explain certain selection-related problems to the faculty, possibly by means of small "position" papers.

The faculty, in general, has difficulty in understanding the actions of the library in acquiring material and making it available for use. They contrast the library's efforts with the results they themselves could achieve by either going directly to a bookstore or writing to the publisher. Given that there are basic operational differences between the library and the individual, it would be politic for the library to acquaint the faculty with certain facts of library life. Such information need not be presented in an apologetic manner; it has sufficient general interest to warrant presenting the facts as general background information for the faculty. Suitable topics might include the auction-like nature of the out-of-print situation, retrospective purchasing, the problems of standing orders, the implications of adding a serial, etc.

Guideline 5

> The librarian must actively seek out information on future plans of the institution which have impact upon the library and its collection, and must educate others about library lead-time requirements.

The importance of this guideline is almost too obvious to mention -- but the need to mention it is equally as obvious, judging from experience of the present study. The librarian should not first learn of plans for a new school, department, or degree program by reading about it in the newspaper. The librarian should know and inform others of the lead-time needed for the library to make its contribution to a new activity. He should actively seek out information. One way this can be accomplished is to have the librarian or his designee hold membership on committees whose actions have consequences for the library or by making advanced reports or minutes available to him.

In addition, the academic departments may be canvassed regularly for data regarding their plans. Items of library interest from this source might include:

- New faculty members
- New course offerings
- New degree programs
- Changes in collection areas
- Increases in major enrollments
- Projects requiring library support
- Department efforts to seek external funds

The library could develop a standard list of such topics and include a general estimate of the time needed for it to respond in each case.

Guideline 6

The library should consider using the faculty to perform collection assessments by providing financial support for such efforts during non-teaching portions of the year.

This task could occupy a one- or two-month period during the summer or other non-teaching time. It should not be regarded as a sinecure. Possible subtasks to be accomplished during this period include: selectively retiring a portion of the collection to storage; assessing designated areas in terms of strengths and weaknesses; compiling bibliographies; and making retrospective recommendations. His efforts could result in a written statement of work accomplished. Obviously, such efforts would not be required on a yearly basis for a department; therefore, this temporary assignment could be rotated among the departments as the situation so demands.

Guideline 7

> Any faculty member who is designated as the department library representative should have his teaching duties or other departmental duties reduced in order to meet the time demands of this position.

Guideline 8

> The use of graduate students in regard to collection development and selection activities of a department should be formalized by creating a bibliographic assistantship within the department. The library should provide professional guidance on techniques and methods.

Such an assistantship is not to be viewed as either a make-work affair or as a means of acquiring clerical labor. The position would provide a valuable opportunity for a beginning professional to acquaint himself intimately with the broad range of literature in his field. His duties would parallel those of the library representative in part, but could also consist of compiling bibliographies of interest to the department, assess present collection, making recommendations for retrospective ac tions, etc.

Guideline 9

> Where book fund allotments are made to the department, the department should be informed of the specific amount of the allotment and its status periodically during the course of the financial year.

There is a vagueness associated with the semi-allotment, an allotment made but not fully disclosed, which tends to generate ment on the departmental level. The faculty feel that their planning efforts in regard to selection activities are hampered by not knowing financial limits. They tend to impute a variety of sinister reasons the library for this air of secrecy. The librarian should realize that unstructured approach can create negative feelings which may outw whatever benefits result from it.

Guideline 10

> If a single faculty member makes the majority of the selection decisions within a department, it should be as a result of explicit choice on the part of the department; if it occurs, it should be known to occur,

A department's decision to allow one person to do major sele tion duty is one that is within its province. However, this same situa can occur without common knowledge of its occurrence. The latter case has the potential danger of having a major portion of the selections be related to or unevenly distributed across areas of importance to the department. The general statement that everyone in the department is free to select does not necessarily mean that everyone is equally represented in regard to selection choices.

Guideline 11

> The faculty should encourage their professional societies to play a greater role in providing bibliographic aids for the literature in their respective fields.

The professional societies should be encouraged to take on the function of providing and fostering bibliographic control over the literature in their fields. Specifically, this should take the form of establishing recommended lists on a continuing basis, conducting citation survey studies within the serials area, and -- most importantly -- providing an inventory of relevant works by area by time. These societies could also provide a visiting lecturer series featuring a scholar well-versed in the literature sources of the field.

Techniques, Methods, and Procedures

Guideline 12

> The library should at least give careful consideration to employing an automatic acquisition plan for the majority of its current imprints.

The automatic acquisition plan was the major innovation to be found in the selection field. As such, intense pro and con positions have developed about it. Certain misconceptions do seem to exist; for example, it "represents an abandonment of selection responsibility," and by taking "everything" printed you are introducing inappropriate materials [illegible] collection. On these two points, the actual situation requires the [illegible] to set up definite specifications as to areas and levels which are to [illegible] used by the acquisition agency as guides in directing a flow of materials to the library for its approval. Thus, such plans do not eliminate decision making on the part of the library or the faculty; rather, they [illegible] change the nature of the selection tool from related information to the material itself. Sufficient safeguards can be built into the system to insure that omitted and rejected items serve as a check on the adequacy of these guides and the degree to which they are being followed.

The advantages appear to include: more rapid acquisition of current imprints; more comprehensive coverage; more freedom of [illegible] which selectors may then devote to retrospective decisions; and possible financial benefits. No realistic appraisal had yet been made by any of the libraries in our study who were using it, but this was due to the newness of the plan at these institutions. It is recommended that the plan should at least be examined to see if it meets the needs of a particular library.

Guideline 13

> Quantitative knowledge of the dimensions of each collection area is needed for a selector to know what part of the total literature he either has or is seeking to acquire.

To designate, for example, polymer chemistry as a collection area and then proceed to spend time and money acquiring materials in that area is not a sufficient approach. A more rational approach would entail knowing what the entire body of literature consists of and then deciding upon the nature and size of the sample to be acquired from it.

At the present time, no available figures exist on the printed output for an area within any specified time span. The information may exist in bits and pieces, but not in a collated fashion. If it did exist, the task of the selector would be greatly simplified. If he knew, for example, that there were 1,227 directly relevant volumes on polymer chemistry in existence, and than an average of 20 new volumes might appear each year, he then knows the scope of the area. Given this information, he can begin to structure his collection efforts by: (a) applying his expertise in assessing what percentage of past writings still hold present value, thus bringing his retrospective collecting into sharper focus; (b) comparing his available funds with estimated collection costs, thus yielding a reliable estimate of the time it will take to reach some level of collection adequacy; and (c) assuring himself that current collection efforts are complete in that available selection candidates are coming to this attention.

This.situation remains as an ideal at the present time; however, its importance to selection decisions and collection development is sufficiently great to warrant the effort needed to make such information available. The scope of this task is such as to require the joint efforts of such groups as the American Library Association, professional societies, and publishers.

Guideline 14

If librarians who are engaged in selection have little formal background in the specific subject area, they should audit those courses within that field which would provide a basic working vocabulary and/or an introduction to the literature.

Guideline 15

The use of selection tools should go beyond publishers' flyers and journal advertisements and/or reviews to include the broader spectrum of professional bibliographic items.

Publishers' flyers and journal advertisements and reviews are useful, readily available sources of selection information. However, exclusive dependence on them entails two shortcomings: (a) there is the redundant aspect in that nearly everyone is on the same mailing lists for flyers and thus the total amount of selection time available within a department, for example, is spent on the same tool or source; and (b) by limiting one's attention to these tools, current imprints may receive excessive attention to the possible detriment of retrospective efforts. In addition, exclusive reliance upon these materials fosters a *passive* selection role in which one selects from among that which is fed to him; selection responsibility must also include a more *active* component whereby one seeks out the less visible, less advertised materials of relevance.

The library could select those professional selection tools which are (a) most useful, and (b) amenable to use by non-librarians. It could then publicize their existence to the faculty along with an explanation of their advantages; e.g., comprehensiveness, depth, correct bibliographic citations, relevance to retrospective collecting, etc. A further effort to increase their use might take the form of sharing with the department the cost of works selected from these tools up to a specified limit.

Guideline 16

> The library should consider conducting a short course on professional selection tools and other bibliographic topics for the library representatives on the faculty.

The purpose of this course would be to expose the library representatives to a wider range of selection tools for both current and retrospective collecting.

Guideline 17

> A selector should receive notification from the library when (a) his material is not able to be acquired and/or (b) when his material has arrived.

Guideline 18

> The library should consider setting up a separate room or area as a bibliographic center for the representatives which would contain those professional library tools deemed most useful to faculty selection efforts. This would be especially essential if the faculty selects most of the materials added to the collection.

Guideline 19

Acquire the published works and major references cited by any new faculty member.

One method of assessing the needs of a new faculty member even prior to his arrival is to examine the references he has cited in his publications. These materials were useful to him in the past and may be logical selection choices if he will still be engaged in the same area of specialization. A listing of his publications may usually be found in his vita or resumé; his department can provide guidance as to the current relevance of the specialized area.

Communication and Feedback

Four groups were involved in the current examination of selection processes: the library staff, the faculty, the administration, and the faculty/library committee. In general, the lines of communication among these groups were poorly developed with the result that information important to the selection process was not transmitted. The following guidelines attempt to correct the defects noted in the study. It should be noted that the absence of adequate communication lines also has implications beyond the area of selection.

Guideline 20

The library community must work harder at convincing their administrators that funds for adequate staffing are just as important as book funds.

The librarian must make as strong a case as possible for the need for staff to keep pace with the growing volume of material. The temptation is great for the administration to view the book fund and the physical plant as the key means of meeting "the library problem" -- but such partial approaches show an equally partial awareness of the interlocking relationship between staff and materials. Large book funds coupled with limited staff yield large, uncataloged backlogs, unordered material, and eventually a dilution of the other important services a library should provide to its users. The librarian should seek the support of the faculty in presenting his case; they have experienced the analogous situation of high student-to-teacher ratios. Ultimately, the task of getting this message across rests with the library community and the individual librarian.

Guideline 21

> The faculty should be fully informed as to the mechanics and extent of any automatic acquisition or extensive standing order plan; repeated communications are necessary to get the message across.

Cases were found where faculty members knew very little about existing plans of either type with the result that misinterpretations detract from the full effectiveness of such plans. Typical cases included: no knowledge that such plans were in effect; uncertainty as to their implications for faculty selection activity, and lack of knowledge regarding the criteria used in selecting publishers and which publishers were so covered. The library should not consider its obligation to inform the faculty in this regard to be met by a single memorandum. It should employ a variety of means in a repeated fashion to get the message across to the faculty; such means can include use of the faculty/library committee, campus newspaper, memoranda, and personal communication. This attempt at communication is distinct from deliberations as to whether such plans are to be employed.

Guideline 22

> Every faculty/library committee must, in addition to whatever other duties it performs, serve as a communication link between the faculty and the library.

It is difficult to recall from the past study an instance in which a faculty member cited the committee as a source of information in regard to anything about the library. Several of the committees were performing useful functions, but the general case involved a gap in communications between the committee and the faculty. The library itself may bear some of the responsibility for this lack of communications since it probably establishes independent lines to the faculty on its own. However it must be the general function of all faculty/library committees to pass on information to their colleagues which would improve the faculty's abili to deal effectively with the library.

Guideline 23

> Each academic department should, if feasible, be provided with a yearly report on materials added to its portion of the collection.

It would be useful to provide each department with an end-of-the year statement which summarizes the additions made to their collection in terms of the areas of importance to them. Minimal information of thi type is available now; e. g., a pile of carbon copy order slips in the library representatives' desks, or a collection of acquisition lists compiled over the months -- but a more summarized statement is needed. The statement could take the minimum form of numbers of volumes added to each area, or the more detailed form of specific titles by area.

Guideline 24

> There should be a freer exchange of information among related academic science departments in regard to useful selection techniques, tools, and procedures. At present, such intercommunication is generally lacking.

APPENDICES

Appendix A: Selection Policy and Objectives

Appendix B: Technical Data

APPENDIX A

Included here are means of implementing some of the guidelines cited earlier. Primary attention is given to the policy guideline; certain forms useful to data collection efforts in this regard are presented.

SELECTION POLICY AND OBJECTIVES

It was stated that information exists within the institution which can serve as a basis for indicating the particular set of selection procedures, principles, and decisions appropriate to a particular library. This information was categorized as: (a) the service objectives of the institution and library, (b) environmental factors that can influence the nature of the collection or selection action, (c) collection specifications, and (d) current selection needs.

The following sections attempt to be more specific about the sources of such information.

Service Policy

Information regarding this topic is desired so that a clear picture is obtained as to what the institution is seeking to achieve and what groups are most intimately involved in these endeavors. As with all of the information discussed in these sections, the library is acquiring it in order to deduce from it meaningful operational statements relating to the collection.

Institutional Objectives

Three sources of information are suggested for the librarian to investigate in determining what the institution seeks to accomplish. The sources differ among themselves in terms of direct relevance to objectives; some address themselves to the question directly, others contribute indirectly by providing information on smaller aspects of the issue. Taken together, information from these sources can provide a view of institutional objectives useful to the library in assessing its own contribution to the institution.

Statements Regarding Major Objectives

Ideally, the major objectives of the institution would be available in some public document designed to inform all concerned. If such a statement exists, it should answer such questions as:

> What is the nature of the products it seeks to produce?
>
> What activities or standards are most valued by the institution?
>
> What areas of endeavor or what portions of society does it claim responsibility toward?
>
> Does it seek eminence in some field of endeavor?

Answers to these broad questions would clarify the objectives of the institution to the extent that the librarian could perceive certain foci of interest common to all elements of the institution. If they are not available, then the following sources are suggested as containing statements of major objectives:

- President's or Chancellor's Annual Reports
- Board of Trustees' Reports
- Charter of the Institution
- Published History of the Institution
- Reports prepared for accreditation purposes

- Various catalogs of the institution
- Faculty Senate documents

Supplemental information bearing on major institutional objectives may be found in documents which address themselves to more specific topics. These include:

- Admission policy
- Faculty employment standards
- Statement of faculty duties and responsibilities
- Policies regarding contractual research
- Policies regarding institutes within the total institution

Attention may also be profitably directed toward actions taken by the institution; the rationale being that even in the absence of written objectives, the institution has acted in accordance with some principle or toward some goal. Potentially relevant institutional actions or their results may be indicated by:

- Budgetary documents indicating what activities received financial support and with what relative emphasis
- Advance degrees held by the faculty
- Occupational data on alumni
- Registrar's data on present students:
    - Average family income
    - Distribution on standard placement tests
    - Degrees pursued
    - Career objectives
    - Part-time versus full-time ratio

User Groups

The second part of the service policy statement identifies those groups of people with whom the library will interact in accomplishing the objectives of the institution. More specifically, the nature of the demands such groups make upon the library must be detailed and implications drawn for collection development and for related library activities.

A suggested data collection form for acquiring such information is presented herein. It provides for: (a) identification of the various groups, (b) an indication of each group's relative size, (c) the intended purpose such groups have in using the library, (d) the type of materials used in accomplishing these purposes, and (e) the physical activities engaged in during accomplishment of these purposes.

The form is suggestive in that certain items may be changed to fit a particular library's needs. Completion of the form is accomplished by rating each group on each item in terms of the four-point scale shown at the bottom of the form. This scale reflects the general frequency of contact or interaction of a group with a purpose, type material, or activity.

As a first approach, the information needed to complete this form could be acquired from the library staff. One method would be to have those staff members whom you believe to possess this information rate the total form independently. Comparison of their ratings may show areas of high and low agreement; where disagreement exists, use the ratings of the person most knowledgeable in that area. It is quite likely that no one person is fully informed in all areas and all groups. This in itself is one benefit of the form -- it brings together in one place important pieces of information that were formerly spread among many staff members and, as such, were not available for use in a unified fashion.

Form 1

USER GROUPS

	Lower Division	Upper Division	Graduate, M.A.	Graduate, Ph.D.	Postgraduate	Teaching Staff	Research Staff	Administration	General Public	External Professional	Library Staff	Neighboring Institutions	Other
elative size (% of total users)													
requency of visits													
uration of visits*													
ses materials to accomplish:													
Recreational reading													
Required course reading													
Extra-course reading													
Course research projects													
Original research project													
Teaching purposes													
Maintaining proficiency													
ype material used:													
Books													
Periodicals													
Newspapers													
Manuscripts													
Government publications													
Reference													
Audio													
Films													
Microform													
Foreign language													
Rare													
Other (specify)													
ctivities:													
Borrows material													
Interacts with library staff beyond mechanics of borrowing													
Uses library as a work center													
Makes selection recommendations													
Uses inter-library loan													
Uses reproduction facilities													
Other (specify)													

NOTE: Each relevant group should be rated on the following scale for each item:

0 -- Never
1 -- Seldom
2 -- Occasionally
3 -- Frequently

* A. Less than 1 hour
B. 1 - 2 hours
C. 2 - 4 hours
D. More than 4 hours

A second approach which can be used at a later stage is to acquire more objective information upon which to base the ratings. For example, the users can be surveyed as to their purposes in using the library.

It should be noted that certain sections of this form can also be used to indicate the desired state of affairs as well as the present user situation. That is, the statements of objectives mentioned earlier could be translated into desired ratings for various items and groups. For example, assume that service to the local community is a desired objective; it would receive high ratings for recreational reading (purposes section), books (type material), and borrowing material (activities). By having the forms completed, for both the actual and the desired situation, discrepancies can be perceived and appropriate remedial actions taken.

Environmental Characteristics

The librarian should determine and be aware of any aspects of the user groups, or the university or external environment which could or should have implications for collection development activities. A partial checklist of such environmental factors along with an indication of their potential impact is presented below.

Factor	Potential Implications For:
Relative geographical isolation of the institution	Provision of materials relating to the cultural/recreational needs of users
Financial characteristics of the students	Provision of texts related to course work

(Partial checklist, cont'd)

Factor	Potential Implications For:
Degree standards for faculty employment	Provision of materials related to self-educational efforts on faculty's part
Presence/absence of library resources external to the institution	The degree of self-sufficiency or completeness of coverage sought for the collection areas
Relationship to neighboring junior-educational units (e. g., junior colleges)	The type of areas in which collection will occur and the level of the material acquired in these areas
Relationship to local industries	Provision of technical reports and bibliographic services
Relationship to local professional groups	Provision of specialized sub-collections
Contractual research performed by the institution	Provision of bibliographic services and acquisition of specialized materials

As indicated, this listing is a partial one; its main purpose lies in broadening the librarian's awareness of those aspects of the general environment which have a conceivable impact upon collection planning.

Collection Specifications

The major portions of the total library collection result from the academic subjects or fields which comprise the teaching and research activity areas of the institution; smaller portions arise as a result of special collections and interests not directly related to academic areas.

This section presents a method for acquiring the information needed to define these specific areas of academic concern and to determine what actions are needed to achieve collections within these areas. The basic approach is that of a "collection census" and is embodied in Form 2.*

This information is of an "apolitical" nature in that it is needed to guide selection decisions regardless of who is actually responsible for making selection decisions. Much of it has the department as its source; portions of it may be generated by the library staff. If desired, additional information could be sought from the department at this time. Questions, for example, on the relative amount of retrospective collecting to be engaged in; preferences regarding the form (microform, hardcover, paperback, etc.) of acquired materials; whether the department has need of special materials or facilities, and other selection-related matters could be included along with Form 2.

The library could also question the departments as to the manner and extent to which the library is expected to aid the instructional program and research activities of the department.

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*The "desired acquisition levels" portion of this form was obtained from a similar assessment aid devised by San Francisco State College.

Subject ______________________
Prepared By __________________
Date ________________________

	AREAS		
Number of Books Currently Held			
Total Relevant Books in Print (if available)			
Percent of Total Books Held			
Distribution of Current Holdings By Publication Date:			
Pre 1920			
1921 - 1930			
1931 - 1940			
1941 - 1950			
1951 - 1960			
1961 - present			
Evaluation of Holdings for Specific Purposes*			
Teaching: Lower Division			
Upper Division			
Graduate			
Research			
Other (specify)			
Additional Books Needed (already published)			
Desired Acquisition Level**			
Foreign Languages:			
(a) Include			
(b) Exclude			

* Evaluation Levels

1. Excellent
2. Good
3. Adequate
4. Poor
5. Non-existent

** Desired Acquisition Levels

A. Books and other materials in numbers and variety sufficient to meet the needs of all students in their course work and advance study and to enable instructors to prepare for their classroom work

B. Books and other materials in numbers and variety sufficient to meet the needs of undergraduate students in their course work and advance study and to enable instructors to prepare for their classroom work

C. Materials for general reading

D. Limited holdings of key materials needed in answering most common reference questions

It should be recognized that information of this nature has a limited lifetime of usefulness and should be periodically updated. The frequency of such updating efforts is dependent upon the rapidity of change experienced at each institution. Those portions of the collection which are principally under the library's control as far as selection is concerned should also be assessed in a similar manner.

Current Selection Needs

Current selection needs are provided to a major extent by the information in Form 2 which indicates the number of books desired from retrospective and current sources in key collection areas. These key areas, as cited by the departments, represent the major areas of concern but are possibly not the only areas. For example, some survey of a department's present holdings is needed to inform it on the extent of existing materials in the areas cited. If this survey goes further and encompasses the total set of holdings for the department, then areas may be seen to exist which were not cited (e.g., past areas of emphasis, gift collections, etc.). The department should be informed of their existence and a decision should be made as to any further support to be given them. These may then contribute -- perhaps on a lesser basis -- to current selection needs.

APPENDIX B

This appendix contains forms used in the data collection portion of the study and the lists of basic books, journals, and topics employed. In addition to these, lists of specific selection tools cited by the respondents are included.

LIST I:
SELECTION TOOLS CITED IN INTERVIEWS WITH SCIENCE FACULTY

Chemistry

Serials

Frequency	Title
(3)	American Chemical Society. Journal.
(1)	American Scientist
(1)	Analytical Chemistry
(1)	Chemical Abstracts
(6)	Chemical & Engineering News
(1)	Faraday Society. Transactions
(15)	Journal of Chemical Education
(1)	Nature
(2)	Physics Today
(11)	Science

Physics

Serials

Frequency	Title
(8)	American Journal of Physics
(3)	American Scientist
(1)	Journal of Research. Section A: Physics and Chemistry; Section B: Mathematics and Mathematical Physics; Section C: Engineering and Instrumentation
(1)	Mathematical Reviews
(1)	The Physics Teacher
(22)	Physics Today
(1)	Publisher's Weekly
(1)	Review of Modern Physics
(11)	Science
(2)	Scientific American

Monographs

(10)	American Institute of Physics. Check List of Books and Periodicals for an Undergraduate Physics Library. Lancaster, Pa., The Institute, 1962

Biology

Serials

Frequency	Title
(2)	American Journal of Botany
(1)	American Medical Association. Journal
(6)	American Scientist
(1)	Bacteriological Reviews
(3)	Biological Abstracts
(7)	Bioscience
(2)	Current Contents, Chemical, Pharmaco-Medical & Life Sciences Edition
(1)	Developmental Biology
(1)	Ecology
(1)	Entomological Society of America. Annals
(1)	Federation of American Societies for Experimental Biology. Federation Proceedings
(1)	Journal of Animal Ecology
(1)	Journal of Biological Chemistry
(1)	Nature
(1)	Plant Physiology
(2)	Publisher's Weekly
(11)	Quarterly Review of Biology

(Biology Serials, cont'd)

(1)	Royal Entomological Society of London. Proceedings. Series A: General Entomology
(1)	Royal Society. Proceedings. Series B: Biological Sciences
(1)	Saturday Review
(27)	Science
(2)	Scientific American
(2)	Turtox News (General Biological Supply House, Inc.)
(1)	Wildlife Review

Other

(6)	American Institute of Biological Sciences: various lists of recommended books
(3)	Society of Systematic Zoology: various lists of recommended books

LIST II:

SELECTION TOOLS CITED IN INTERVIEWS WITH LIBRARY STAFF MEMBERS

Chemistry

Serials

Frequency	Title
(1)	American Book Publishing Record
(1)	Analytical Chemistry
(1)	Aslib Book-List
(2)	Chemical & Engineering News
(1)	Chemistry and Industry
(4)	Journal of Chemical Education
(2)	Nature
(1)	New Technical Books
(2)	Science

Monographs

(1)	Crane, E. J. and others. A Guide to the Literature of Chemistry. New York, Wiley, 1957
(1)	Mellon, M. G. Chemical Publications, Their Nature and Use. New York, McGraw-Hill, 1958

Physics

Serials

Frequency	Title
(1)	American Journal of Physics
(1)	American Scientific Books
(1)	Electronics
(2)	Nature
(1)	New Technical Books
(1)	Nuclear Engineering
(1)	Nucleonics
(5)	Physics Today
(1)	Publisher's Weekly
(1)	Technical Book Review Index

Other

(1)	Association of Special Libraries and Information Bureaux: various publicatio

Biology

Serials

Frequency	Title
(1)	American Biology Teacher
(1)	American Book Publishing Record
(1)	American Midland Naturalist
(1)	Biological Abstracts
(3)	Bioscience
(2)	Books in Print
(1)	Bulletin of the Atomic Scientists
(1)	Cumulative Book Index
(1)	Daedalus
(1)	Ecology
(1)	Eugenics Quarterly
(1)	Mankind Quarterly
(1)	National Library of Medicine Current Catalog
(1)	Natural History
(3)	Nature
(1)	New Technical Books
(1)	Publisher's Weekly
(1)	Quarterly Review of Biology

(Biology Serials, cont'd)

(1)	Research Grants Index (USPHS)
(4)	Science
(1)	Science and Children
(1)	Science Education
(1)	Stechert-Hafner Book News

Other

(1)	Association of Special Libraries and Information Bureaux: various publications

Science -- Unspecified

Serials

Frequency	Title
(1)	AIAA Bulletin
(1)	ALA Bulletin
(3)	American Book Publishing Record
(1)	Aslib Book-List
(1)	Bibliographische Berichte/Bibliographical Bulletin
(1)	Bioscience
(1)	British Book News
(1)	Bulletin of Bibliography and Magazine Notes
(9)	Choice
(3)	College and Research Libraries
(1)	Franklin Institute Journal
(1)	Interdoc
(12)	Library Journal
(1)	Les Livre du Mois
(4)	Nature
(5)	New Technical Books
(2)	New York Times Book Review

(Science -- Unspecified, Serials cont'd)

(4)	Publisher's Weekly
(1)	Recorder (Columbia University Engineering Library)
(5)	Science
(1)	Science News
(1)	Scientific American
(1)	Scientific Information Notes
(2)	Special Libraries
(1)	Stechert-Hafner Book News
(1)	Subject Guide to Books in Print
(1)	Sunday Times (London) Literary Supplement
(2)	Technical Book Review Index
(1)	UNESCO Bulletin for Libraries
(2)	Wilson Library Bulletin

Monographs

(1)	Brown, Charles H. Scientific Serials. Chicago, Association of College and Research Libraries, 1956

(Science -- Unspecified, Monographs cont'd)

(3) *Ulrich's International Periodicals Directory. Vol. 1, Scientific, Technical & Medical...* 12th ed., edited by Marietta Chicorel. New York, Bowker, 1967

(1) *Union List of Serials.* 3rd ed., New York, H. W. Wilson, 1965

(3) Walford, A. J. *Guide to Reference Material. 2nd ed., Vol. 1, Science & Technology.* London, The Library Association, 1966

Other

(2) Library of Congress Proof Sheets

LIST OF BASIC JOURNALS AND PERIODICALS FOR CHEMISTRY, PHYSICS, AND BIOLOGY

CHEMISTRY

JOURNALS AND PERIODICALS

1. Analytical Chemistry
2. Chemical & Engineering News
3. Chemical Communications
4. Chemical Reviews
5. Chemische Erichte
6. Chemistry
7. Endeavour
8. Helvetica Chimica Acta
9. Industrial and Engineering Chemistry
10. Inorganic Chemistry
11. Journal of Biological Chemistry
12. Journal of Chemical Education
13. Journal of Chemical Physics
14. Journal of Inorganic and Nuclear Chemistry
15. Journal of Organic Chemistry
16. Journal of Physical Chemistry

PHYSICS
JOURNALS AND PERIODICALS

1. Journal of the Acoustical Society of America
2. Advances in Physics
3. American Journal of Physics
4. Bulletin of the American Physical Society
5. Annalen Der Physik
6. Annals of Physics
7. Applied Optics
8. Applied Physics Letters
9. British Journal of Applied Physics
10. Electronics
11. Faraday Society. Transactions.
12. Journal of the Franklin Institute
13. JETP Letters
14. Journal of Applied Physics
15. Journal of Chemical Physics
16. Journal of Geophysical Research
17. Journal of Mathematical Physics
18. Journal of Molecular Spectroscopy
19. Journal of Scientific Instruments
20. Molecular Physics
21. Nuclear Physics
22. Nucleonics
23. Journal of the Optical Society of America

(Physics Journals and Periodicals, cont'd)

24. The Physical Review
25. Physical Review Letters
26. The Physics of Fluids
27. The Physics Teacher
28. Physics Today
29. Progress of Theoretical Physics
30. The Review of Scientific Instruments
31. Reviews of Modern Physics
32. Soviet Journal of Nuclear Physics
33. Zeitschrift Fur Physik

BIOLOGY

JOURNALS AND PERIODICALS

1. American Journal of Botany
2. American Zoologist
3. Biological Bulletin
4. Biological Reviews
5. Botanical Review
6. Ecology
7. Experimental Cell Research
8. Experimental Parasitology
9. Evolution
10. Genetics
11. International Review of Cytology
12. Journal of Bacteriology
13. Journal of Biological Chemistry
14. Journal of Cellular and Comparative Physiology
15. Journal of Experimental Biology
16. Journal of Experimental Zoology
17. Journal of Heredity
18. Journal of Morphology
19. Journal of Protozoology
20. Physiological Reviews
21. Plant Physiology
22. Systematic Zoology

LIST OF BASIC BOOKS
FOR CHEMISTRY, PHYSICS, AND BIOLOGY

CHEMISTRY
BOOK CHECKLIST

1. Catch, John R. Carbon-14 Compounds. Butterworth, 1961.

2. Clark, George Lindenberg, and Gessner G. Hawley. The Encyclopedia of Chemistry. Reinhold, 1957.

3. Compton, Charles. An Introduction to Chemistry. Van Nostrand, 1958.

4. Farber, Edward. The Evolution of Chemistry: A History of Its Ideas, Methods, and Materials. Ronald, 1962.

5. Fieser, Louis F., and Mary Feiser. Introduction to Organic Chemistry. Heath, 1957.

6. Geiseman, Theodore A. Principles of Organic Chemistry. Freeman, 1962.

7. Hiller, Lejaren A., and Rolfe H. Herber. Principles of Chemistry, McGraw, 1960.

8. International Encyclopedia of Chemical Science. Van Nostrand, 1964.

9. Lange, Norbert Adolph, and Gordon M. Forker (eds.). Handbook of Chemistry (10th edition). McGraw, 1961.

10. Moore, Walter J. Physical Chemistry (3rd edition). Prentice-Hall, 1962.

(Chemistry Book Checklist, cont'd)

11. Pauling, Linus. College Chemistry (3rd edition). Freeman, 1964.

12. Pauling, Linus. The Nature of the Chemical Bond and the Structure of Molecules and Crystals: An Introduction to Modern Structural Chemistry (3rd edition). Cornell, 1960.

13. Pierce, Willis C., Edward L. Haenisch, and Donald T. Sawyer. Quantitative Analysis (4th edition). Wiley, 1958.

14. Seaborg, Glenn T. Man-Made Transuranium Elements. Prentice-Hall, 1963.

PHYSICS

BOOK CHECKLIST

1. Beiser, Arthur. *Concepts of Modern Physics.* McGraw, 1963.

2. Harvey, Bernard G. *Introduction to Nuclear Physics and Chemistry.* Prentice-Hall, 1962.

3. Holton, Gerald, and Duane H. D. Roller. *Foundations of Modern Physical Science.* Addison-Wesley, 1959.

4. Kinsely, Lawrence E., and Austin R. Frey. *Fundamentals of Acoustics (2nd edition).* Wiley, 1962.

5. Massey, Harrie S. W. *The New Age in Physics.* Harper, 1960.

6. Michels, Walter C. (Editor-in-Chief). *International Dictionary of Physics and Electronics.* Van Nostrand, 1961.

7. Orear, Jay. *Fundamental Physics.* Wiley, 1961.

8. Rogers, Eric M. *Physics for the Inquiring Mind.* Princeton, 1960.

9. Rusk, Rogers D. *Introduction to Atomic and Nuclear Physics.* Appleton, 1964.

10. Shortley, George, and Dudley Williams. *Elements of Physics.* Prentice-Hall, 1961.

11. Susskind, Charles (ed.). *The Encyclopedia of Electronics.* Reinhold, 1962.

(Physics Book Checklist, cont'd)

12. Taylor, Edwin F. *Introductory Mechanics*. Wiley, 1963.

13. Weidner, Richard T., and Robert L. Sells. *Elementary Modern Physics*. Allyn and Bacon, 1960.

14. White, Harvey E. *Introduction to Atomic and Nuclear Physics*. Van Nostrand, 1964.

15. White, Harvey E. *Modern College Physics*. Van Nostrand, 1962.

16. Wilcox, Glade. *Basic Electronics*. Holt, 1960.

BIOLOGY
BOOK CHECKLIST

1. Alexopoulos, Constantine John. Introductory Mycology (2nd edition). Wiley, 1962.

2. Barnes, Robert D. Invertebrate Zoology. Saunders, 1963.

3. Darwin, Charles. The Origin of Species and the Descent of Man. (Modern Library Edition.) Random, 1936.

4. Dobzhansky, Theodosius. Mankind Evolving: The Evolution of the Human Species. Yale, 1962.

5. Elliott, Alfred M., and Charles Ray, Jr. Biology. Appleton, 1960.

6. Giese, Arthur C. Cell Physiology (2nd edition). Saunders, 1962.

7. Hickman, Cleveland P. Integrated Principles of Zoology (2nd edition). Mosby, 1961.

8. Lagler, Karl F., John E. Bardach, and Robert R. Miller. Ichthyology: The Study of Fishes. Wiley, 1962.

9. Mayr, Ernst. Animal Species and Evolution. Harvard, 1963.

10. Robbins, Wilfred W., T. Elliot Weier, and C. Ralph Stocking. Botany: An Introduction to Plant Science (3rd edition). Wiley, 1964.

(Biology Book Checklist, cont'd)

11. Sinnott, Edmund W., and Katherine S. Wilson. Botany: Principl and Problems (6th edition). McGraw, 1963.

12. Stahl, Franklin W. The Mechanics of Inheritance. Prentice-Hall, 1964.

13. Villee, Claude A. Biology (4th edition). Saunders, 1962.

14. Weisz, Paul B. Elements of Biology. McGraw, 1961.

15. Young, John Zachary. The Life of Vertebrates (2nd edition). Oxford, 1962.

QUESTIONNAIRE AND DATA FORMS COMPLETED BY THE LIBRARY AND FACULTY

QUESTIONNAIRE

1. What was the total number of volumes in your library at the end of 1966? ______________________________

2. What is the size of your library staff (professional and non-professional)? __________________________

3. What is your total college or university enrollment?

   ____

DEPARTMENTAL INFORMATION

College/University ____________ Person Providing Data ________

Department ____________ Date ____________

FACULTY/STAFF

Total Number ____________

Professors ____________

Associate Professors ____________ Assistant Professors ________

Instructors ____________

Teaching Assistants ____________

Lecturers ____________

DEGREES HELD (Faculty only)

Ph. D. ________ M. A., M. S. ________ B. A. ________

Prescribed College/University Teaching Load ____________

Modal or Average (which) Teaching Load ____________

CURRICULUM

Total Number of Courses ____________

Lower Division (Freshman/Sophomore) ____________

Upper Division (Junior/Senior) ____________

Graduate ____________

Number of Introductory Lecture Sections (per semester) ____________

Number of Laboratory Courses (per semester) ____________

DEPARTMENTAL ENROLLMENT*

Total Enrollment ____________ Fulltime ______ Parttim

Number of Undergraduate Majors ________ Graduate Majors ________

Lower Division (F/S) Enrollment ________ M. A. ______ Ph. D. ______

Upper Division (Jr. /Sr.) Enrollment ________

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* Base enrollment figures on previous registration period - Fall, 1966

Budgeted Amount and/or Expenditures of Your Institution
For Education and General Purposes
For Past Five Fiscal Years*

Fiscal Year	Budgeted Amount	Expenditures
1961-62		
1962-63		
1963-64		
1964-65		
1965-66		

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* This figure should include budgeted amounts or expenditures for general administration and general expense, instruction and departmental research, extension and public services, libraries, operations and maintenance of physical plant, organized research, and organized activities relating to educational departments

Total Budgeted Amount and/or Expenditures of Your Library For Past Five Fiscal Years

Fiscal Year	Budgeted Amount	Expenditures
1961-62		
1962-63		
1963-64		
1964-65		
1965-66		

Bookfund Expenditures for Periodicals[1] and Books[2] For Past Five Fiscal Years

Fiscal Year	Periodical Expenditures	Book Expenditures
1961-62		
1962-63		
1963-64		
1964-65		
1965-66		

[1] A periodical is defined as a serial publication which constitutes one issue in a continuous series under the same title, usually published at regular intervals over an indefinite period, individual issues in the same series being numbered consecutively.

[2] A book is defined as a unit of publication, either bibliographically independent or a volume in a series published under the same title, consisting of leaves, sheets, or signatures sewn or otherwise bound together, covered or uncovered. Bound volumes of periodicals and newspapers are not considered books.

Total Amount Allocated to Science Areas[3] For Books and Periodicals for Past Five Fiscal Years

Fiscal Year	Biology	Botany	Zoology	Chemistry	Physics
1961-62					
1962-63					
1963-64					
1964-65					
1965-66					

[3] Fill in amounts for Biology Department only if there are not separate Botany and Zoology Departments

DATA TOPIC LISTS AND FORMS
USED IN THE
OBJECTIVE COLLECTION DESCRIPTION PORTION OF THE STUDY

Library of Congress Classification Numbers For
SHELF LIST PROCEDURE I--Librarian

A. BIOLOGY

	Standard	Recent
Primary:	Human Reproduction QH 471 - QH 489	Molecular Biology QH 431
Secondary:	Brain QP 376 - QP 425	Proteids and Allied Substances QP 551

B. CHEMISTRY

	Standard	Recent
Primary:	Alkali Metals QD 172. A_4	Thin Layer Chromatography (Chromatographic Analysis) QD 271
Secondary:	Aromatic Compounds QD 331 - QD 369	Ferrocene and other Metallocenes TN 757

C. PHYSICS

	Standard	Recent
Primary:	Quantum Theory QC 174 - QC 179	Elementary Particle Physics QC 721
Secondary:	Thermodynamics QC 311 - QC 319	Lasers TK 7872. L3

Library of Congress Classification Numbers For
SHELF LIST PROCEDURE II--Faculty

A. BIOLOGY

1.	Cytology	QH 573 - QH 581
2.	General Physiology	QH 501 - QH 531
3.	Radiation Biology	QH 652
4.	Embryology	QL 951 - QL 973
5.	Differentiation and Regeneration	QH 499
6.	Virology	RM 751
7.	Histology	QM 551
8.	Enzymology	QP 601
9.	Molecular Biology	QH 431
10.	Entomology	QL 461 - QL 599
11.	Plant Morphology	QK 641 - QK 669
12.	Bacteriology	QH 201 - QH 277

B. BOTANY

1.	Plant Cells and Tissues	QK 725
2.	Plant Morphology	QK 641 - QK 669
3.	Mycology	QK 600 - QK 635
4.	Plant Ecology	QK 901 - QK 989
5.	Economic Botany	SB 107 - SB 109
6.	Algae	QK 564 - QK 580
7.	Systematic Botany	QK 96
8.	Plant Taxonomy	QK 91 - QK 95
9.	Plant Pathology	SB 599 - SB 791
10.	Radiation Biology	QH 652

C. ZOOLOGY

1.	Protozoology	QL 366 - QL 369
2.	Helminthology	QL 386 - QL 394
3.	Embryology	QL 951 - QL 973
4.	Ornithology	QL 671 - QL 673
5.	Mammalogy	QL 701 - QL 739
6.	Parasitology	QR 75 - QR 84
7.	Entomology	QL 461 - QL 599
8.	Histology	QM 550 - QM 575
9.	Zoogeography	QL 750 - QL 775
10.	Comparative Anatomy	QL 801 - QL 950
11.	Systematic Zoology	QL 351 - QL 352
12.	Herpetology	QL 641 - QL 669
13.	Radiation Biology	QH 652

D. CHEMISTRY

1.	Radiochemistry	QD 601
2.	Instrumental Analysis	QD 54
3.	Crystallography	QD 901 - QD 999
4.	Mineralogy	QE 351 - QE 399
5.	Stereochemistry	QD 481
6.	Organometallic Chemistry	QD 411 - QD 412
7.	Chemistry of Natural Products	QD 415 - QD 449
8.	Heterocyclic Chemistry	QD 400 - QD 409
9.	Thermochemistry	QD 511 - QD 536
10.	Electrochemistry	QD 553 - QD 585
11.	Qualitative Analysis	QD 81 - QD 95
12.	Quantitative Analysis	QD 101 - QD 142
13.	Aromatic Compounds	QD 331 - QD 369
14.	Polymer Chemistry	QD 471

E. PHYSICS

1.	Thermodynamics	QC 311 - QC 319
2.	Elementary Particle Physics	QC 721
3.	Particle Optics	QC 447
4.	Vibrations	QC 231
5.	Quantum Theory	QC 174 - QC 179
6.	Molecular and Nuclear Physics	QC 173
7.	Electrodynamics	QC 631 - QC 645
8.	Classical Mechanics	QC 122 - QC 168
9.	Electromagnetic Waves and Oscillation	QC 661 - QC 665
10.	Hydraulics	TC 160 - TC 179
11.	Pneumatics	QC 161 - QC 168

School ______________________
Person ______________________
Date ______________________
Interviewer ______________________

CHEMISTRY FACULTY LIST

______ 1. Radiochemistry

______ 2. Instrumental Analysis

______ 3. Crystallography

______ 4. Mineralogy

______ 5. Stereochemistry

______ 6. Organometallic Chemistry

______ 7. Chemistry of Natural Products
(terpenes, alkaloids, vitamins, etc.)

______ 8. Heterocyclic Chemistry

______ 9. Thermochemistry

______ 10. Electrochemistry

______ 11. Qualitative Analysis

______ 12. Quantitative Analysis

______ 13. Aromatic Compounds

______ 14. Polymer Chemistry

School ________

Person ________

Date ________

Interviewer ________

PHYSICS FACULTY LIST

______ 1. Thermodynamics

______ 2. Elementary Particle Physics

______ 3. Classical Mechanics

______ 4. Particle Optics

______ 5. Vibrations

______ 6. Quantum Theory

______ 7. Molecular and Nuclear Physics

______ 8. Electrodynamics

______ 9. Electromagnetic Waves and Oscillation

______ 10. Hydraulics

______ 11. Pneumatics

School ____________________

Person ____________________

Date ____________________

Interviewer ____________________

BIOLOGY FACULTY LIST

_____ 1. Cytology

_____ 2. General Physiology

_____ 3. Radiation Biology

_____ 4. Embryology

_____ 5. Differentiation and Regeneration

_____ 6. Virology

_____ 7. Histology

_____ 8. Enzymology

_____ 9. Molecular Biology

_____ 10. Entomology

_____ 11. Plant Morphology

_____ 12. Bacteriology

School ______
Person ______
Date ______
Interviewer ______

BOTANY FACULTY LIST

______ 1. Plant Cells and Tissues
______ 2. Plant Morphology
______ 3. Mycology
______ 4. Plant Ecology
______ 5. Economic Botany
______ 6. Algae
______ 7. Systematic Botany
______ 8. Plant Taxonomy
______ 9. Plant Pathology
______ 10. Radiation Biology

School ____________________

Person ____________________

Date ____________________

Interviewer ____________________

ZOOLOGY FACULTY LIST

______ 1. Protozoology

______ 2. Helminthology

______ 3. Embryology

______ 4. Ornithology

______ 5. Mammalogy

______ 6. Parasitology

______ 7. Entomology

______ 8. Histology

______ 9. Zoogeography

______ 10. Comparative Anatomy

______ 11. Systematic Zoology

______ 12. Herpetology

______ 13. Radiation Biology

RECORD SHEET

	Publication Date	Accession Number	Acquisition Date
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

	Shelf List No.	Books Counted
(a)		
(b)		
(c)		
(d)		

Total Books Counted ______

School ______
Science ______
Topic ______
W – S ______
Interviewer ______
Date ______